

TECHNICAL DATA – DIGITAL REFRACTOMETERS

	DR6000	DR6100	DR6000-T	DR6100-T
SCALES	Refractive index (nD) concentration of sucrose, glucose, fructose and invert sugar [%Brix], User-defined			
MEASUREMENT RANGE	nD 1.3200–1.5800 0–95%Brix	nD 1.3200–1.7000 0–95%Brix	nD 1.3200–1.5800 0–95%Brix	nD 1.3200–1.7000 0–95%Brix
MEASUREMENT ACCURACY	nD ± 0.0001 ± 0.1 %Brix		nD ± 0.0001 ± 0.1 %Brix	nD ± 0.0001 ± 0.1 %Brix
RESOLUTION	nD 0.0001 0.1 %Brix		nD 0.0001 0.1 %Brix	nD 0.0001 0.1 %Brix
MEASUREMENT PERIOD	approx. 4 s			
MEASUREMENT PRISM	Sapphire			
LIGHT SOURCE	LED			
WAVELENGTH	589 nm			
TEMPERATURE CONTROL	Without a sample temperature control, you can connect a thermostat for the tempe- rature control		With integrated Peltier temperature control	
TEMP. CONTROL RANGE			10–80 °C	
ACCURACY OF TEMP. CONTROL			± 0.1 °C	
TEMPERATURE COMPENSATION	Can be activated (ICUMSA or freely definable)			
TEMPERATURE MEASUREMENT	With integrated temperature sensor Pt100			
TEMPERATURE MEASUREMENT RANGE	10–80 °C			
TEMP. MEASUREMENT ACCURACY	± 0.1 °C			
TEMP. MEASUREMENT RESOLUTION	0.1 °C			
METHODS	A practically unlimited number of methods can be set			
ADJUSTMENT	Automatic (menu-guided)			
CONTROL	7.0" - capacitive touch-screen, 800 x 480 Pixel			
HOUSING	Aluminum cast, powder-coated			
INTERFACES	USB, RS-232, Ethernet			
OPERATING VOLTAGE	90–240 V, 47–63 Hz			
POWER CONSUMPTION (MEASUREMENT OPERATION)	25 W		40 W	
POWER CONSUMPTION (MAX.)	75 W			
DIMENSIONS (W X H X D)	215 mm x 150 mm x 345 mm			
WEIGHT	5 kg			

DR6200-T**DR6300-T**

Refractive index (nD) concentration of sucrose, glucose, fructose and invert sugar [%Brix], User-defined	
nD 1.32000–1.58000 0–95%Brix	nD 1,32000–1,70000 0–95 %Brix
nD ±0.00002 ±0.02%Brix	
nD 0.00001 0.01%Brix	
approx. 4 s	
Sapphire	
LED	
589 nm	
With integrated Peltier temperature control	
10–80 °C	
±0.1 °C	
Can be activated (ICUMSA or freely definable)	
With integrated temperature sensor Pt100	
10–80 °C	
±0.1 °C	
0.1 °C	
A practically unlimited number of methods can be set	
Automatic (menu-guided)	
7.0" - capacitive touch-screen, 800 x 480 Pixel	
Aluminum cast, powder-coated	
USB, RS-232, Ethernet	
90–240 V, 47–63 Hz	
40 W	
75 W	
215 mm x 150 mm x 345 mm	
5 kg	

DR6000-TF**DR6100-TF****DR6200-TF****DR6300-TF**

Refractive index (nD) concentration of sucrose, glucose, fructose and invert sugar [%Brix], User-defined			
nD 1.3200–1.5800 0–95%Brix	nD 1.3200–1.7000 0–95%Brix	nD 1.32000–1.58000 0–95%Brix	nD 1.32000–1.70000 0–95%Brix
nD ±0.0001 ±0.1%Brix		nD ±0.00002 ±0.02%Brix	
nD 0.0001 0.1%Brix		nD 0.00001 0.01%Brix	
approx. 4 s			
Sapphire			
LED			
589 nm			
With integrated Peltier temperature control			
10–80 °C			
±0.1 °C			
Can be activated (ICUMSA or freely definable)			
With integrated temperature sensor Pt100			
10–80 °C			
±0.1 °C			
0.1 °C			
A practically unlimited number of methods can be set			
Automatic (menu-guided)			
7.0" - capacitive touch-screen, 800 x 480 Pixel			
Aluminum cast, powder-coated			
USB, RS-232, Ethernet			
90–240 V, 47–63 Hz			
45 W			
75 W			
215 mm x 150 mm x 345 mm			
5.3 kg			

REFRACTOMETER STANDARDS



ORGANISATION	NOTATION	LAST REV.	TITLE
AOAC	898.02	1898	Physical Constants of 10 per cent distillate of lemon and orange oils
AOAC	905.01	1905	Methanol in Distilled Liquors - Immersion refractometer method
AOAC	908.01 Appendix C	1908	Percent Alcohol by Volume in Distilled Liquors
AOAC	920.141	1920	Refractive index of lemon and orange oils
AOAC	920.58	1920	Alcohol in wines - By volume from refraction (rapid method)
AOAC	920.78	1920	Index of refraction of cacao fat
AOAC	921.08	1921	Index of refraction of oils and fats
AOAC	932.12	1980	Solids (soluble) in fruits and fruit products
AOAC	932.14	2000	Solids in syrups
AOAC	940.06	1940	Methanol in Cordials and Liqueurs
AOAC	940.09	1964	Total Solids in Cordials and Liqueurs
AOAC	940.16	1940	Volatile esters in cordials and liqueurs
AOAC	943.05	1997	Dry substance in corn syrups and sugars
AOAC	945.102	1945	Oil (mineral) in fats
AOAC	948.10	1948	Water (added) in milk
AOAC	950.04	1950	Alcohol by volume in distilled liqueurs
AOAC	950.06	1997	Fermentation of beer
AOAC	950.13	1950	Alcohol in nonalcoholic beverages
AOAC	953.16	1953	Fruit Content (Approximate) of Frozen Fruit-Sugar Mixtures
AOAC	960.57	1970	Crystalline substances
AOAC	969.18	1969	Refractive Index of Butterfat
AOAC	969.38	1969	Moisture in honey
AOAC	970.15	1971	Alcohol (by weight) in beer - Refractometer method
AOAC	970.59	2002	Solids (soluble) in tomato products
AOAC	973.65	1974	Characterization and matching of glass fragments
AOAC	976.20	1976	Solids (Soluble) in Frozen Concentrate for Lemonade
AOAC	981.23	1992	Mineral wool insulation
AOAC	983.01	1984	Urea and methyleneureas (Water-soluble) in fertilizers
AOAC	983.17	2001	Solids (Soluble) in Citrus Fruit Juices
AOAC	995.17	1998	Beet sugars in fruit juices

REFRACTOMETER STANDARDS



ORGANISATION	NOTATION	LAST REV.	TITLE
AOAC	2000.19	2000	Beet or cane sugar in maple syrup
AOCS	S 2-64	2017	Methods for Testing Drying Oils
AOCS	Tp 1a-64	2017	Refractive Index of Drying Oils
AOCS	Methods Set	2000	AOCS Methods Set
ASTM	D542-14	2014	Standard Test Method for Index of Refraction of Transparent Organic Plastics
ASTM	D5775-95(2014)	2014	Standard Test Method for Rubber—Determination of Bound Styrene in Styrene Butadiene Rubber by Refractive Index
ASTM	D1218-12(2016)	2016	Standard Test Method for Refractive Index and Refractive Dispersion of Hydrocarbon Liquids
ASTM	D1747-09(2014)	2014	Standard Test Method for Refractive Index of Viscous Materials
ASTM	D3321-19	2019	Standard Test Method for Use of the Refractometer for Field Test Determination of the Freezing Point of Aqueous Engine Coolants
ASTM	D4095-97(2014)	2014	Standard Practice for Use of the Refractometer for Determining Nonvolatile Matter (Total Solids) in Floor Polishes
ASTM	D4542-15	2015	Standard Test Methods for Pore Water Extraction and Determination of the Soluble Salt Content of Soils by Refractometer
ASTM	D5006-11(2016)	2016	Standard Test Method for Measurement of Fuel System Icing Inhibitors (Ether Type) in Aviation Fuels
DIN	51423-2:2010-02	2010	Testing of mineral oils - Part 2: Measurement of the relative refractive index with the Abbe-refractometer Prüfung von Mineralölen - Teil 2: Messung der relativen Brechzahl mit dem Abbe-Refraktometer
EHC	Harmonised methods of the European Honey Commission	1997	Determination of moisture, refractometric method
ICUMSA	GS4/3/8-13 (2009)	2009	The Determination of Refractometric Dry Substance (RDS %) of Molasses - Accepted and Very Pure Syrups (Liquid Sugars), Thick Juice and Run-off Syrups-Official
ICUMSA	SPS-3 (2000)	2000	Refractometry and Tables - Official
ISO	1743:1982	2013	Glucose Syrup – Determination of dry matter content – Refractive index method
OIML	R 108	1993	Refractometers for the measurement of the sugar content of fruit juices
OIV	MA-AS2-02 : R2012	2012	Evaluation by refractometry of the sugar concentration in grape musts, concentrated grape musts and rectified concentrated grape musts
OIV	MA-AS312-01B : R2009	2009	Alcoholic strength by volume - Measurement of the alcoholic strength of the distillate by refractometry
Ph. Eur.	7th Edition-2.2.7	2008	Refractive Index
USP	831	2013	Refractive Index

STANDARD ORGANISATIONS

AOAC	–	Association of Analytical Communities
AOCS	–	American Oil Chemists' Society
ASTM	–	American Society for Testing and Materials
DIN	–	German Institute for Standardization
EHC	–	European Honey Commission
ICUMSA	–	International Commission for Uniform Methods of Sugar Analysis
ISO	–	International Organization for Standardization
OIML	–	International Organization of Legal Metrology
OIV	–	International Organisation of Vine and Wine
Ph. Eur.	–	European Pharmacopoeia
USP	–	United States Pharmacopoeia

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REFRACTOMETER SAMPLES



Sorted by value		T [°C]	Alphabetical order	
Refractive Index [nD]	SAMPLES		SAMPLES	Refractive Index [nD]
1.274-1.276	Sevoflurane	20	Acetic acid	1.333-1.372
1.300	2H-,3H-Perfluoropentan	20	Acetic acid 30%	1.351
1.315	Perfluorodecalin	20	Aceton	1.358
1.333	Water	20	Acetyltributylcitrate	1.442-1.445
1.333	Saline	20	Acryl glass	1.490
1.333-1.372	Acetic acid	20	Acrylnitril	1.391
1.333-1.353	Ammonia	20	AdBlue	1.383
1.333-1.377	Ammonium chloride	20	Aloe extract	1.334
1.333-1.397	Ammonium sulfate	20	Alumina	1.760
1.333-1.375	Barium chloride	20	Ammonia	1.333-1.353
1.333-1.336	Boric acid	20	Ammonia solution	1.367-1.377
1.333-1.403	Calcium chloride	20	Ammonium chloride	1.333-1.377
1.333-1.417	Cesium chloride	20	Ammonium sulfate	1.333-1.397
1.333-1.380	Cobaltous chloride	20	Anethole 25°C	1.559-1.561
1.333-1.349	Creatinine	20	Anilin	1.586
1.333-1.367	Cupric sulfate	20	Anise oil	1.552-1.561
1.333-1.349	Dextran	20	Anisol	1.518
1.333-1.362	Ethanol	20	Apple	1.350
1.333-1.393	Ethylene glykol	20	Asphalt / bitumen	1.650
1.333-1.383	Ferric chloride	20	Barium chloride	1.333-1.375
1.333-1.365	Formic acid	20	Basic solution, viscose	1.393-1.397
1.333-1.459	D-Fructose	20	Bean jam	1.430
1.333-1.439	D-Glucose	20	Beef curry	1.357
1.333-1.403	Hydrochloracid	20	Beer	1.340
1.333-1.348	Inulin	20	Benzol	1.490
1.333-1.417	Lactic acid	20	Benzyl alcohol	1.538-1.541
1.333-1.359	Lactose	20	Benzyl benzoate	1.568-1.570
1.333-1.387	Lead nitrate	20	Benzyl nicotinate	1.569-1.570



REFRACTOMETER SAMPLES



Sorted by value		T [°C]	Alphabetical order	
Refractive Index [nD]	SAMPLES		SAMPLES	Refractive Index [nD]
1.333-1.399	Lithium chloride	20	Bean, broccoli, blueberry, blackberry	1.345
1.333-1.415	Magnesium chloride	20	Benzylbromide	1.575
1.333-1.385	Magnesium sulfate	20	Benzylformiat	1.511
1.333-1.357	Maltose	20	Bisabolol	1.493-1.499
1.333-1.373	Manganous sulfate	20	Bitter fennel oil	1.528-1.539
1.333-1.355	D-Mannitol	20	Bitter-fennel herb oil	1.487-1.501
1.333-1.340	Methanol	20	Borage oil	1.473-1.481
1.333-1.345	Nickel sulfat	20	Boric acid	1.333-1.336
1.333-1.387	Nitric acid	20	Brook mint	1.482-1.495
1.333-1.375	Phosphoric	20	Bunker A / No. 2 fuel oil	1.490
1.333-1.349	Potassium	20	Bunker C / No. 6 fuel oil	1.560
1.333-1.391	Potassium bromide	20	Butter	1.450
1.332-1.334	Purified water	20	Calcium chloride	1.333-1.403
1.333-1.403	Potassium carbonate	20	Calcium fluoride	1.430
1.333-1.367	Potassium chloride	20	Campherspirit	1.372-1.374
1.333-1.411	Potassium chromate	20	Canned seasoning yogurt	1.366
1.333-1.352	Potassium dichromate	20	Canned syrup	1.372
1.333-1.387	Potassium ferricy anide	20	Canola oil	1.470
1.333-1.403	Potassium Iodide	20	Caraway oil	1.484-1.490
1.333-1.425	Potassium hydroxide	20	Carrot	1.345
1.333-1.355	Potassium nitrate	20	Cassia oil	1.600-1.614
1.333-1.351	Potassium oxalate	20	Cesium chloride	1.333-1.417
1.333-1.345	Potassium phosphate	20	Cetearyl octanoate	1.444-1.448
1.333-1.345	Potassium sulfate	20	Cetylstearylisononanoat	1.440-1.450
1.333-1.475	Potassium thiocyanate	20	Chili sauce	1.380
1.333-1.483	Procaine hydrochloride	20	Cineol	1.456-1.460
1.333-1.353	Sea water	20	Cinnamon leaf oil	1.527-1.540
1.333-1.361	Human serum or plasma	20	Cinnamon oil	1.572-1.591



REFRACTOMETER SAMPLES



Sorted by value		T [°C]	Alphabetical order	
Refractive Index [nD]	SAMPLES		SAMPLES	Refractive Index [nD]
1.333-1.391	Silver nitrate	20	Citronella oil	1.463-1.475
1.333-1.375	Sodium acetate	20	Clofibrate	1.500-1.505
1.333-1.340	Sodium bicarbonate	20	Clove oil	1.530
1.333-1.400	Sodium bromide	20	Cobaltous chloride	1.333-1.380
1.333-1.367	Sodium carbonate	20	Coconut oil	1.440
1.333-1.379	Sodium chloride	20	Cocoyl caprylocaprate	1.445
1.333-1.417	Sodium diatrizoate	20	Codliver oil Type-A/B	1.477-1.484
1.333-1.513	Sodium dichromate	20	Coffee	1.340
1.333-1.373	Sodium ferrocyanide	20	Coke	1.350
1.333-1.433	Sodium hydroxide	20	Concentrated juice	1.430
1.333-1.349	Sodium molybdate	20	Condensed milk	1.450
1.333-1.379	Sodium nitrate	20	Cooking oil	1.480
1.333-1.387	Sodium phosphate	20	Coriander oil	1.462-1.470
1.333-1.355	Sodium sulfate	20	Corn soup	1.347
1.333-1.423	Sodium thiosulfate	20	Creatinine	1.333-1.349
1.333-1.430	Sodium tungstate	20	Cupric sulfate	1.333-1.367
1.333-1.407	Strontium chloride	20	Cutting oil emulsion	1.334
1.333-1.501	Sucrose	20	Cyclohexan	1.426
1.333-1.403	Sulfuric acid	20	Cauliflower, swede, paprika	1.342
1.333-1.397	Tham	20	Cherry	1.345
1.333-1.401	Trichloroacetic acid	20	Decyl oleate	1.456-1.458
1.333-1.403	Urea	20	Dextran	1.333-1.349
1.333-1.348	Urine solida human	20	D-Fructose	1.333-1.459
1.333-1.365	Zink sulfate	20	D-Glucose	1.333-1.439
1.334	Cutting oil emulsion	20	Dibutyl adipate	1.435
1.334	Plant cell culture	20	Dibutyl phthalate (DBP)	1.490-1.495
1.334	Grinding chemical liquid	20	Dichloromethane	1.423-1.425
1.334	Aloe extract	20	Diesel oil	1.478



REFRACTOMETER SAMPLES



Sorted by value		T [°C]	Alphabetical order	
Refractive Index [nD]	SAMPLES		SAMPLES	Refractive Index [nD]
1.335	Green tea	20	Diethyl phthalate	1.500-1.505
1.336	Miso soup	20	Diethylene glycol monoethyl ether	1.426-1.428
1.338-1.341	2-Propanol 10%	20	Diiodbenzol	1.718
1.340	Japanese plum	20	Diiodmethan	1.743
~1.340	Beer	20	Diiodopropan	1.642
~1.340	Coffee	20	Diisopropyl adipate	1.424
1.342	Endive, asparagus, pea, cauliflower, swede, paprika, salat, tomato, onion	20	Dimercaprol	1.568-1.574
1.345	Carrot, bean, broccoli, blueberry, blackberry, raspberry, cherry	20	Dimethicone 1000+	1.404-1.406
1.345	Plain yogurt	20	Dimethicone 350+	1.404-1.406
1.345-1.348	2-Propanol 20%	20	Dimethyl sulfoxide	1.478-1.479
1.346	Lime / Lemon	20	Dimethylacetamide	1.435-1.439
1.347	Corn soup	20	D-Mannitol	1.333-1.355
1.348	Orange	20	Dalmatian sage	1.457-1.473
1.348	Gelatin liquid	20	Damascenon	1.380
1.350	Apple	20	Egg	1.355
1.350	Watermelon, wineberry	20	Electrical discharging liquid	1.357
1.350	Soy milk	20	Electrolyte	1.370
1.350	Coke	20	Emulsifying hydrophobic base gel	1.473-1.483
1.350	Milk	20	Endive, asparagus, pea, salat, tomato, onion	1.342
1.351	Acetic acid 30%	20	Epoxy	1.620
1.352	Formic acid 25%	20	Egg yolk	1.420
1.352	Paper starch	20	Ethyl acetate	1.370-1.373
1.353-1.356	2-Propanol 30%	20	Ethanol	1.333-1.362
1.354	1,2,2-Trifluortrichlorethan / Freon 113	20	Ethylenglycol	1.431
1.355	Egg	20	Ethylhexylglycerin	1.449-1.453
1.357	Electrical discharging liquid	20	Eucalyptus oil	1.458-1.470
1.357	Beef curry	20	Eugenol	1.540-1.542



REFRACTOMETER SAMPLES



Sorted by value		T [°C]	Alphabetical order	
Refractive Index [nD]	SAMPLES		SAMPLES	Refractive Index [nD]
1.358	Aceton	20	Ferric chloride	1.333-1.383
1.359–1.361	2-Propanol 40%	20	Flint glass	1.620
1.360	Lactic acid bacteria beverage	20	Formic acid	1.333-1.365
1.360	Nectar	20	Formic acid 25%	1.352
1.360	Silicone solution	20	Formic acid 85%	1.369
1.363–1.365	2-Propanol 50%	20	Formic acid 98%	1.371
1.366	Canned seasoning yogurt	20	Gelatin liquid	1.348
1.367-1.377	Ammonia solution	20	Glucose syrup	1.463-1.495
1.368	Pudding	20	Glycerin	1.474
1.368–1.369	2-Propanol 60%	20	Glycerol	1.470-1.475
1.369	Formic acid 85%	20	Glycerol 85%	1.449-1.455
1.370	Electrolyte	20	Glycerol diisostearate at 30°C	1.462-1.468
1.370-1.373	Ethyl acetate	20	Green tea	1.335
1.371	Formic acid 98%	20	Grinding chemical liquid	1.334
1.371–1.372	2-Propanol 70%	20	Hexetidine	1.461-1.467
1.372	Canned syrup	20	Honey	1.520
1.372-1.374	Campherspiritus	20	Honey starch syrup	1.495
1.374–1.375	2-Propanol 80%	20	Human serum or plasma	1.333-1.361
1.375	Trichlorfluormethan / Freon 11	20	Hydrochloracid	1.333-1.403
1.376	Starch	20	Hydrophobic base gel	1.475-1.495
1.376–1.377	2-Propanol 90%	20	Hydroxyethyl salicylate	1.548-1.551
1.380	Chili sauce	20	Immersion oil	1.512
1.380	Damascenon	20	Inulin	1.333-1.348
1.381	Magnesium fluoride	20	Iodbenzol	1.620
1.383	AdBlue	20	Iodnaphthalin	1.701
1.384-1.387	1-Propanol	20	Isoeugenol	1.577
1.385	Ketchup	20	Isopropyl myristate	1.434-1.437
1.388	n-Heptan	20	Isopropyl palmitate	1.436-1.440



REFRACTOMETER SAMPLES



Sorted by value			Alphabetical order	
Refractive Index [nD]	SAMPLES	T [°C]	SAMPLES	Refractive Index [nD]
1.391	Acrylnitril	20	Japanese plum	1.340
1.393-1.397	Basic solution, Viscose	20	Juniper oil	1.471-1.483
1.395	Soy sauce	20	Ketchup	1.385
1.396	Vinyl acetat	20	Carbon disulfide	1.630
1.398	n-Octan	20	Lactic acid	1.333-1.417
1.400	Pastry cream	20	Lactic acid bacteria beverage	1.360
~1.400	Macroglycerolcaprylocaprte	20	Lactose	1.333-1.359
1.402-1.405	Potassium Lactate	20	Lactulose-syrup	1.445-1.478
1.403-1.406	Paraldehyde	20	Lard at 40°C	1.458-1.461
1.404-1.406	Dimethicone 350+	20	Lavender oil	1.455-1.466
1.404-1.406	Dimethicone 1000+	20	Lead nitrate	1.333-1.387
1.406	Silicone oil	20	Lemon oil	1.473-1.476
1.420	Egg yolk	20	Lime / lemon	1.346
1.422-1.425	Valproic Acid	20	Lithium chloride	1.333-1.399
1.423-1.425	Dichloromethane	20	Macrogol-20-glycerolmonostearat	1.464-1.468
1.424	Diisopropyl Adipate	20	Macroglycerolcaprylocaprte	~1.400
1.426	Cyclohexan	20	Macroglycerololeate	1.470
1.426-1.428	Diethylene Glycol Monoethyl Ether	20	Macroglycerolricinoleat	1.470-1.474
1.429-1.430	Methanesulfonic Acid	20	Macrogololeat	~1.466
1.429-1.432	Triacetin	20	Magnesium chloride	1.333-1.415
1.430	Calcium fluoride	20	Magnesium fluoride	1.381
1.430	Bean jam	20	Magnesium sulfate	1.333-1.385
1.430	Soy bean	20	Maltose	1.333-1.357
1.430	Concentrated juice	20	Mandarin peel oil	1.474-1.478
1.431	Ethylenglycol	20	Manganous sulfate	1.333-1.373
1.431-1.433	Propylene glycol	20	Marmelade / jam / jelly	1.460
1.434-1.437	Isopropyl myristate	20	Medium-chain triglycerides	1.440-1.452
1.435	Dibutyl adipate	20	Marshmallow syrup	1.440-1.455
			Methanesulfonic acid	1.429-1.430



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Sorted by value		T [°C]	Alphabetical order	
Refractive Index [nD]	SAMPLES		SAMPLES	Refractive Index [nD]
1.435-1.439	Dimethylacetamide	20	Methanol	1.333-1.340
1.435-1.440	Pentylene glycol	20	Methyl salicylate	1.535-1.538
1.436-1.440	Isopropyl palmitate	20	Methylene iodide	1.744
1.439-1.441	1,3-Butanediol	20	Milk	1.350
1.439-1.442	Propylenglycoldicaprylocaprate	20	Mint oil	1.456-1.470
1.440	Coconut oil	20	Miso soup	1.336
1.440-1.450	Cetylstearylisononanoat	20	Molasses	1.470
1.440-1.455	Eibischsirup	20	Monobromnaphthalin	1.650
1.440-4.444	2-Ethylhexyl laurate	20	Mountain pine oil	1.474-1.480
1.440-1.444	2-Ethylhexyllauromyristat	20	Muscatel sage	1.456-1.466
1.440-1.446	Triethyl citrate	20	Natural rubber	1.540
1.440-1.452	Medium-chain triglycerides	20	Nectar	1.360
1.442-1.445	Acetyltributylcitrate	20	Neroli oil	1.464-1.474
1.444-1.448	Cetearyl octanoate	20	n-Heptan	1.388
1.445	Cocoyl caprylocaprate	20	Nickel sulfat	1.333-1.345
1.445-1.478	Lactulose-Syrup	20	Nikethamide	1.524-1.526
1.449-1.453	Ethylhexylglycerin	20	Nitric acid	1.333-1.387
1.449-1.455	Glycerol 85%	20	N-Methylpyrrolidone	1.469
1.450	Condensed milk	20	n-Octan	1.398
1.450	Butter	20	Nutmeg oil	1.457-1.485
1.450-1.454	Squalan	20	Octyldodecanol	1.453-1.457
1.453-1.457	Octyldodecanol	20	Oleic acid	1.457-1.461
1.455-1.465	Sorbital solution 70% non crystalizing	20	Oleyl alcohol at 25 °C	1.458-1.460
1.455-1.466	Lavender oil	20	Oleyl oleate	1.464-1.466
1.456-1.458	Decyl oleate	20	Olive oil	1.468
1.456-1.460	Cineol	20	Orange	1.348
1.456-1.466	Muscatel sage	20	Oil	1.473-1.478
1.456-1.470	Mint oil	20	Paraffin	1.479



REFRACTOMETER SAMPLES



Sorted by value		T [°C]	Alphabetical order	
Refractive Index [nD]	SAMPLES		SAMPLES	Refractive Index [nD]
1.457-1.467	Peppermint oil	20	Paraldehyde	1.403-1.406
1.457-1.473	Dalmatian sage	20	Pastry cream	1.400
1.457-1.473	Spanish sage	20	Pentylene glycol	1.435-1.440
1.457-1.485	Nutmeg oil	20	Peppermint oil	1.457-1.467
1.457-1.461	Oleic acid	20	Perfluorodecalin	1.315
1.458-1.460	Oleyl alcohol at 25 °C	20	Phenethyl alcohol	~1.532
1.458-1.461	Lard at 40°C	20	Phenol	1.541
1.458-1.470	Eucalyptus oil	20	Phenoxyethanol	1.537-1.539
1.460	Quartz glass	20	Phenylnaphtalin	1.664
1.460	Marmelade / Jam / Jelly	20	Phosphoric	1.333-1.375
1.461-1.467	Hexetidine	20	Phytomenadione	~1.526
1.461-1.468	Spike oil	20	Pine needle oil	1.465-1.480
1.462-1.468	Glycerol diisostearate at 30°C	20	Plain yogurt	1.345
1.462-1.470	Coriander oil	20	Plant cell culture	1.334
1.463-1.475	Citronella oil	20	Plastic eyeglasses ruby	1.760
1.463-1.495	Glucose syrup	20	Polycrylmethacrylate	1.490
1.464-1.466	Oleyl oleate	20	Polycarbonate	1.585
1.464-1.473	Rosemary oil	20	Polystyrene	1.580
1.464-1.474	Neroli oil	20	Potassium lactate	1.402-1.405
1.464-1.468	Macrogol-20-glycerolmonostearat	20	Potassium	1.333-1.349
1.465-1.475	Terpentine oil beach pine-type	20	Potassium bromide	1.333-1.391
1.465-1.478	Purified terpentine oil	20	Potassium carbonate	1.333-1.403
1.465-1.480	Pine needle oil	20	Potassium chloride	1.333-1.367
1.466	Virgin jojoba wax	20	Potassium chromate	1.333-1.411
~1.466	Macrogololeat	20	Potassium dichromate	1.333-1.352
1.466	Refined jojoba wax	20	Potassium ferricy anide	1.333-1.387
1.466-1.470	Refined macadamia oil	20	Potassium hydroxide	1.333-1.425
1.467-1.471	Refined olive oil	20	Potassium Iodide	1.333-1.403



REFRACTOMETER SAMPLES



Sorted by value		T [°C]	Alphabetical order	
Refractive Index [nD]	SAMPLES		SAMPLES	Refractive Index [nD]
1.467-1.471	Virgin olive oil	20	Potassium nitrate	1.333-1.355
1.468	Olivenöl	20	Potassium oxalate	1.333-1.351
1.468-1.473	Refined peanut oil	20	Potassium phosphate	1.333-1.345
1.469	Virgin avocado oil / Refined avocado oil	20	Potassium sulfate	1.333-1.345
1.469	N-Methylpyrrolidone	20	Potassium thiocyanate	1.333-1.475
1.470	trans-Decalin	20	Procaine hydrochloride	1.333-1.483
1.470	Molasses	20	Propofol	1.512-1.514
1.470	Canola oil	20	Propylene glycol	1.431-1.433
1.470	Refined sunflower oil containing oleic acid	20	Propylglycoldicaprylocaprate	1.439-1.442
1.470	Macroglycerololeate	20	Pudding	1.368
1.470-1.473	Refined almond oil	20	Purified turpentine oil	1.465-1.478
1.470-1.474	Macroglycerolricinoleat	20	Purified water	1.332-1.334
1.470-1.474	Refined rapeseed oil	20	Pyrrolidone	1.487-1.490
1.470-1.475	Glycerol	20	Paper starch	1.352
1.470-1.476	Refined sesamum oil	20	Quartz glass	1.460
1.470-1.476	Sweet orange oil	20	Refined apricot kernel oil	1.472
1.471-1.483	Juniper oil	20	Refined corn oil	1.472-1.476
1.472	Refined apricot kernel oil	20	Refined evening primrose oil	1.476-1.480
1.472	Refined safflower oil (Type2)	20	Refined grape seed oil	1.474-1.477
1.472-1.478	Refined soya oil	20	Refined jojoba wax	1.466
1.472-1.476	Refined corn oil	20	Refined macadamia oil	1.466-1.470
1.473-1.476	Lemon oil	20	Refined olive oil	1.467-1.471
1.473-1.476	Refined sunflower oil	20	Refined peanut oil	1.468-1.473
1.473-1.477	Sorbitan trioleate	20	Refined rapeseed oil	1.470-1.474
1.473-1.478	Refined wheatgerm oil	20	Refined safflower oil (Type1)	1.476
1.473-1.481	Borage oil	20	Refined almond oil	1.470-1.473
1.473-1.483	Emulsifying hydrophobic base gel	20	Refined safflower oil (Type2)	1.472
1.474	Glycerin	20	Refined sesamum oil	1.470-1.476



REFRACTOMETER SAMPLES



Sorted by value		T [°C]	Alphabetical order	
Refractive Index [nD]	SAMPLES		SAMPLES	Refractive Index [nD]
1.474-1.477	Refined grape seed oil	20	Refined soya oil	1.472-1.478
1.474-1.478	Mandarin peel oil	20	Refined sunflower oil	1.473-1.476
1.474-1.480	Sorbitan and glycerolmonooleat	20	Refined sunflower oil containing oleic acid	1.470
1.474-1.480	Mountain pine oil	20	Raspberry	1.345
~1.475	Virgin wheatgerm oil	20	Ricinus oil	1.480
1.475-1.482	Tea tree oil	20	Rosemary oil	1.464-1.473
1.475-1.495	Hydrophobic base gel	20	Saline	1.333
1.476	Refined safflower oil (Type1)	20	Sea water	1.333-1.353
1.476	Virgin safflower oil	20	Sesame oil	1.478
1.476-1.480	Refined evening primrose oil	20	Sevoflurane	1.274-1.276
1.477-1.484	Codliver oil Type-A/B	20	Silicone oil	1.406
1.478	Sesame oil	20	Silicone solution	1.360
1.478	Diesel oil	20	Silver nitrate	1.333-1.391
1.478-1.479	Dimethyl sulfoxide	20	Sodium acetate	1.333-1.375
1.478-1.482	Virgin linseed oil	20	Sodium bicarbonate	1.333-1.340
1.479	Paraffin	20	Sodium bromide	1.333-1.400
~1.479	Virgin castor oil	20	Sodium carbonate	1.333-1.367
1.480	Ricinus oil	20	Sodium chloride	1.333-1.379
1.480	Cooking oil	20	Sodium diatrizoate	1.333-1.417
~1.480	Virgin linseed oil	20	Sodium dichromate	1.333-1.513
1.482-1.485	Trolamine	20	Sodium ferrocyanide	1.333-1.373
1.482-1.495	Brook mint	20	Sodium hydroxide	1.333-1.433
1.484-1.490	Caraway oil	20	Sodium molybdate	1.333-1.349
1.487-1.501	Bitter-fennel herb oil	20	Sodium nitrate	1.333-1.379
1.487-1.490	Pyrrolidone	20	Sodium phosphate	1.333-1.387
1.490	Polyacrylmethacrylate	20	Sodium sulfate	1.333-1.355
1.490	Benzol	20	Sodium tartrate	1.333-1.381
1.490	Acryl glass	20	Sodium thiosulfate	1.333-1.423



REFRACTOMETER SAMPLES



Sorted by value		T [°C]	Alphabetical order	
Refractive Index [nD]	SAMPLES		SAMPLES	Refractive Index [nD]
1.490	Bunker A / No. 2 fuel oil	20	Sodium tungstate	1.333-1.430
1.490-1.495	Dibutyl phthalate	20	Sorbital solution 70% non crystalizing	1.455-1.465
1.490-1.505	Thyme oil	20	Sorbitan and glycerolmonooleat	1.474-1.480
1.493-1.499	Bisabolol	20	Sorbitan trioleate	1.473-1.477
1.495	Honey starch syrup	20	Soy bean	1.430
1.497	Toluol	20	Soy milk	1.350
1.500	Xylen	20	Soy sauce	1.395
1.500-1.505	Clofibrate	20	Spanish sage	1.457-1.473
1.500-1.505	Diethyl phthalate	20	Spike oil	1.461-1.468
1.505	Tetrachlorethylene	20	Squalan	1.450-1.454
1.511	Benzylformiat	20	Star anise oil	1.553-1.556
1.512	Immersion oil	20	Starch	1.376
1.512-1.514	Propofol	20	Strontium chloride	1.333-1.407
1.518	Anisol	20	Styren	1.546
1.520	Honey	20	Sucrose	1.333-1.501
1.524-1.526	Nikethamide	20	Sulfuric acid	1.333-1.403
~1.526	Phytomenadione	20	Sweet orange oil	1.470-1.476
1.527-1.540	Cinnamon leaf oil	20	Tea tree oil	1.475-1.482
1.528-1.539	Bitter fennel oil	20	Turpentine oil beach Pine-Type	1.465-1.475
1.530	2-Phenylethylchlorid	20	Tetrachlorethylene	1.505
1.530	Clove oil	20	Tham	1.333-1.397
1.535-1.538	Methyl salicylate	20	Thyme oil	1.490-1.505
~1.532	Phenethyl alcohol	20	Toluol	1.497
1.537-1.539	Phenoxyethanol	20	Trans-Decalin	1.470
1.538-1.541	Benzyl alcohol	20	Triacetin	1.429-1.432
1.540	Natural rubber	20	Trichloracetic acid	1.333-1.401
1.540-1.542	Eugenol	20	Trichlorfluormethan / Freon 11	1.375
1.541	Zimtacetat	20	Triethyl citrate	1.440-1.446



REFRACTOMETER SAMPLES



Sorted by value		T [°C]	Alphabetical order	
Refractive Index [nD]	SAMPLES		SAMPLES	Refractive Index [nD]
1.541	Phenol	20	Trolamine	1.482-1.485
1.545	2,4-Dichlortoluol	20	Urea	1.333-1.403
1.546	Styren	20	Urine solida human	1.333-1.348
1.548-1.551	Hydroxyethyl salicylate	20	Valproic acid	1.422-1.425
1.552-1.561	Anise oil	20	Vinyl acetat	1.396
1.553-1.556	Star Anise oil	20	Virgin linseed oil	1.478-1.482
1.559-1.561	Anethole 25°C	20	Virgin avocado oil / Refined avocado oil	~1.479
1.560	2-Phenylethanethiol	20	Virgin castor oil	~1.479
1.560	Bunker C / No. 6 fuel oil	20	Virgin jojoba wax	1.466
1.568	Benzylbenzoat	20	Virgin olive oil	1.467-1.471
1.568-1.570	Benzyl benzoate	20	Virgin Safflower oil	1.476
1.568-1.574	Dimercaprol	20	Virgin wheatgerm oil	~1.475
1.569-1.570	Benzyl nicotinate	20	Water	1.333
1.572-1.591	Cinnamon oil	20	Watermelon, wineberry	1.350
1.575	Benzylbromide	20	Xylen	1.500
1.577	Isoeugenol	20	Zimtacetat	1.541
1.580	Polystyrene	20	Zink sulfate	1.333-1.365
1.585	Polycarbonate	20	α-Methyl-Zimtaldehyd	1.608
1.586	Anilin	20	1,2,2-Trifluortrichlorethan / Freon 113	1.354
1.600	2-Ethylnaphthalin	20	1,3-Butanediol	1.439-1.441
1.600-1.614	Cassia oil	20	1-Bromonaphthalene	1.657
1.608	α-Methyl-Zimtaldehyd	20	1-Naphthaldehyd	1.652
1.620	Epoxy	20	1-Propanol	1.384-1.387
1.620	Flint glass	20	2,4-Dichlortoluol	1.545
1.620	Iodbenzol	20	2-Ethylhexyl laurate	1.440-4.444
1.630	Kohlenstoffdisulfid	20	2-Ethylnaphthalin	1.600
1.642	Diiodopropan	20	2H-,3H-Perfluoropentan	1.300
1.650	Monobromnaphthalin	20	2-Phenylethanethiol	1.560



REFRACTOMETER SAMPLES



Sorted by value			Alphabetical order	
Refractive Index [nD]	SAMPLES	T [°C]	SAMPLES	Refractive Index [nD]
1.650	Asphalt / Bitumen	20	2-Phenylethylchlorid	1.530
1.652	1-Naphthaldehyd	20	2-Propanol 10%	1.338-1.341
1.657	1-Bromonaphthalene	20	2-Propanol 20%	1.345-1.348
1.664	Phenylnaphtalin	20	2-Propanol 30%	1.353-1.356
1.701	Iodnaphtalin	20	2-Propanol 40%	1.359-1.361
1.718	Diiodbenzol	20	2-Propanol 50%	1.363-1.365
1.743	Diiodmethan	20	2-Propanol 60%	1.368-1.369
1.744	Methyleneiodide	20	2-Propanol 70%	1.371-1.372
1.760	Alumina	20	2-Propanol 80%	1.374-1.375
1.760	Plastic eyeglasses ruby	20	2-Propanol 90%	1.376-1.377

SAMPLES

The table presents an overview of samples that our customers typically measure with our refractometers. Most of the samples were measured at refractometric standard conditions ($T=20\text{ °C}$, $\lambda=589\text{ nm}$), deviations from the standard are displayed. The values should not be interpreted as specifications.

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