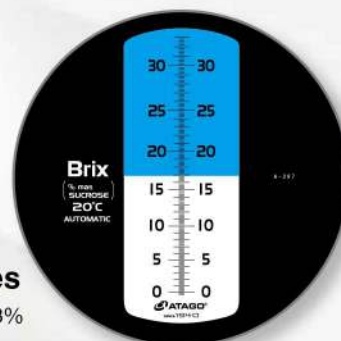


MASTER series

Choose the right model for your sample, based on the features and materials of the instrument.



Brix scale examples
MASTER-α Brix 0~33%



Features 6 types

Both the α and T types are equipped with the Automatic Temperature Compensation feature. Choose the α type for the added feature of IP 65 water-resistance. The H type is the heat-resistant version of the α type.

Series / Model	α	T	M	H	NEW 53S	NEW 500
Water resistant	●	—	—	●	●	●
Automatic temperature compensation	●	●	—	●	●	—
Heat resistant	—	—	—	●	—	●
Milky sample	—	—	—	—	●	—

MASTER-53S for Milky sample

Opaque, inhomogeneous liquids can be difficult to get a clear boundary line with a conventional refractometer. This model is recommended for cream-based sauces, yogurt, mayonnaise, and various emulsions used in industrial processing.

NEW



Milk



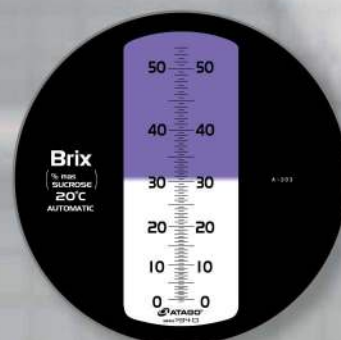
Mayonnaise



Yogurt

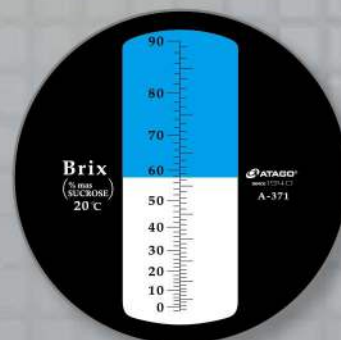


Mold release agent



MASTER-500 0-90% Wide Brix Range

NEW



■ Understanding model names

A model name consists of the scale (sample name), material, and feature type.

Brix Scale

MASTER-

2

P

α

Example Measuring sauces

Sample information

- About 40% Brix (see **A** in chart below)
- Salty
- Oily

Scale



Choose **2** 28-62%
(see **B** in chart below).

Material



Choose the salt-resistant **P**
plastic body.

Metal ... Blank

Features



Choose the washable type for easy cleaning.

Choose **α**

Material 2 types

Choose either metal or plastic.

Metal



Die-cast aluminum

Ideal for the agriculture industry, metal working fluids, and various high-temperature samples. Resistant to organic solvents.

Plastic



PBT

(polybutylene terephthalate)

Resistant to salty and acidic samples.

■ Brix of Various Samples

Refractive index and Brix of various types of samples

Brix (%)	Food industry	Chemical industry	Medical Science industry	Memory (Brix) □ = Memory No.
(Ri)				
1.333	Drinks		Methanol	(1) 10 20 53 500
	Green tea	Cutting oil (emulsion)	Saline	0 0 0 0 0
			Aloe extract	33 10 20 53 90
			Sea water	% % % % %
1.34	Beer	Nickel plate liquid	Chlorella extract	
	Fruits / Vegetables			
	Tomato	Gelatin liquid	Serum	
	Strawberry			
	Lemon	Freon113		
1.35	Coffee			
	Soy milk			
	Cola			
	Milk			
1.36		Silicone solution (emulsion)	Acetone	
	Lactic acid-bacteria beverage		Ethanol	
1.37		Electrolyte	Acetic acid	
		Freon 11	Saturated saline	
1.38		Acrylonitrile		2
	Canned syrup			28
				62 %
1.39				
	Ketchup			
1.40				
	Soy sauce			
	Sauce			
	Jam			
	Low-sugar jam			
		Silicone oil	Octane	4
1.41				45
	Egg yolk			82 %
1.42		Ethylene glycol		
	Fats	Propylene glycol		
1.43	Butter			3
				58
1.44	Olive oil			90 %
1.45				
	Honey			
	Jam			
	Honey Starch Syrup			
1.46		Diesel oil	Glycerin	
		Ricinus		
1.47				
		Polyvinyl chloride (PCV)		
1.48		Styrene	Asphalt	
1.49				
1.50				

Specifications

Brix Scale

Range (Minimum)	Series	α		T		M	
	Material	Metal	Plastic	Metal	Plastic	Metal	Plastic
(1) 0~33% (0.2%)	Model	MASTER- α	MASTER-P α	MASTER-T	MASTER-PT	MASTER-M	MASTER-PM
	Cat.No.	2311	2391	2312	2392	2313	2393
	Accuracy	$\pm 0.2\%$ * $\pm 0.1\%$ (10~30°C)		$\pm 0.2\%$ * $\pm 0.1\%$ (10~30°C)		—	
	Size & Weight	3.2x3.4x20.3cm/155g		3.2x3.4x20.3cm/155g		3.2x3.4x20.3cm/155g	
2 28~62% (0.2%)	Model	MASTER-2 α	MASTER-2P α	MASTER-2T	MASTER-2PT	MASTER-2M	MASTER-2PM
	Cat.No.	2321	2941	2322	2942	2323	2943
	Accuracy	$\pm 0.2\%$ * $\pm 0.1\%$ (10~40°C)		$\pm 0.2\%$ * $\pm 0.1\%$ (10~40°C)		—	
	Size & Weight	3.2x3.4x20.3cm/155g		3.2x3.4x20.3cm/155g		3.2x3.4x20.3cm/155g	
3 58~90% (0.2%)	Model	MASTER-3 α	MASTER-3P α	MASTER-3T	MASTER-3PT	MASTER-3M	MASTER-3PM
	Cat.No.	2331	2951	2332	2952	2333	2953
	Accuracy	$\pm 0.2\%$ * $\pm 0.1\%$ (10~40°C)		$\pm 0.2\%$ * $\pm 0.1\%$ (10~40°C)		—	
	Size & Weight	3.2x3.4x16.8cm/130g		3.2x3.4x16.8cm/130g		3.2x3.4x16.8cm/130g	
4 45~82% (0.2%)	Model	MASTER-4 α	MASTER-4P α	MASTER-4T	MASTER-4PT	MASTER-4M	MASTER-4PM
	Cat.No.	2341	2961	2342	2962	2343	2963
	Accuracy	$\pm 0.2\%$ * $\pm 0.1\%$ (10~40°C)		$\pm 0.2\%$ * $\pm 0.1\%$ (10~40°C)		—	
	Size & Weight	3.2x3.4x16.8cm/130g		3.2x3.4x16.8cm/130g		3.2x3.4x16.8cm/130g	
10 0~10% (0.1%)	Model	MASTER-10 α	MASTER-10P α	MASTER-10T	MASTER-10PT	MASTER-10M	MASTER-10PM
	Cat.No.	2371	2981	2372	2982	2373	2983
	Accuracy	$\pm 0.2\%$ * $\pm 0.1\%$ (10~30°C)		$\pm 0.2\%$ * $\pm 0.1\%$ (10~30°C)		—	
	Size & Weight	3.2x3.4x20.3cm/155g		3.2x3.4x20.3cm/155g		3.2x3.4x20.3cm/155g	
20 0~20% (0.1%)	Model	MASTER-20 α	MASTER-20P α	MASTER-20T	MASTER-20PT	MASTER-20M	MASTER-20PM
	Cat.No.	2381	2991	2382	2992	2383	2993
	Accuracy	$\pm 0.2\%$ * $\pm 0.1\%$ (10~30°C)		$\pm 0.2\%$ * $\pm 0.1\%$ (10~30°C)		—	
	Size & Weight	3.2x3.4x20.7cm/165g		3.2x3.4x20.7cm/165g		3.2x3.4x20.7cm/165g	
53 0~53% (0.5%)	Model	MASTER-53 α	MASTER-53P α	MASTER-53T	MASTER-53PT	MASTER-53M	MASTER-53PM
	Cat.No.	2351	2971	2352	2972	2353	2973
	Accuracy	$\pm 0.5\%$ * $\pm 0.25\%$ (10~30°C)		$\pm 0.5\%$ * $\pm 0.25\%$ (10~30°C)		—	
	Size & Weight	3.2x3.4x16.8cm/130g		3.2x3.4x16.8cm/130g		3.2x3.4x16.8cm/130g	

Heat resistant

Series	H			
Material	Metal			
Model	MASTER-50H	MASTER-80H	MASTER-93H	MASTER-100H
Cat.No.	2354	2364	2374	2384
Range	Brix 0.0~50.0%	Brix 30.0~80.0%	Brix 45.0~93.0%	Brix 60.0~100.0%
Minimum	0.5%			
Accuracy	$\pm 0.5\%$ * $\pm 0.25\%$			
Size & Weight	3.2x3.4x 16.8cm/130g			

Milky sample Wide Brix

Series	53S NEW	500 NEW
Material	Metal	
Model	MASTER-53S	MASTER-500
Cat.No.	2355	2363
Range	Brix 0.0~53.0%	Brix 0.0~90.0%
Minimum	0.5%	1.0%
Accuracy	$\pm 0.5\%$ * $\pm 0.25\%$	
Size & Weight	3.2x3.4x 16.8cm/130g	

Special Scale

Sample	Coolant	Battery Coolant	Battery Coolant	Refractive index	Honey NEW
Series	M	M	M	M	α
Material	Plastic	Plastic	Plastic	Metal	Plastic
Model	MASTER-BR	MASTER-BC	MASTER-BCF	MASTER-RI	MASTER-HONEY
Cat.No.	2930	2931	2932	2612	2524
Scale	① propylene glycol ② ethylene glycol	① ethylene glycol freezing temp ② propylene glycol freezing temp ③ battery fluid d20/20	① ethylene glycol freezing temp ② propylene glycol freezing temp ③ battery fluid d20/20	Refractive index	Honey moisture
Range	① 0 to 70% 0 to -50°C ② 0 to 70% 0 to -50°C	① 0 to -50°C ② 0 to -50°C ③ 1.150 to 1.300	① 32 to -60°F ② 32 to -50°F ③ 1.150 to 1.300	1.435 to 1.520	12.0 to 30.0%
Minimum Scale	5% 5°C	① 5°C ② 5°C ③ 0.01	① 10°F ② 10°F ③ 0.01	0.001	0.2%
Size & Weight	3.2x3.4x16.8cm, 90g	3.2x3.4x20.3cm, 105g		3.2x3.4x16.8cm, 130g	3.2x3.4x16.8cm, 90g

Sample	Seawater	Seawater	Salinity	Salinity	Salinity (Wide range)	Salinity (Wide range)
Series	α	M	α	M	α	M
Material	Plastic	Plastic	Plastic	Plastic	Plastic	Plastic
Model	MASTER-S/Mini α	MASTER-S/Mini M	MASTER-S10 α	MASTER-S10 M	MASTER-S28 α	MASTER-S28 M
Cat.No.	2491	2493	2471	2473	2481	2483
Scale	① Salinity ② Specific gravity		Sodium chloride		Sodium chloride	
Range	① 1‰ ② 0.001		0.0 to 10.0g/100g		0.0 to 28.0g/100g	
Minimum Scale	① 0 to 100‰ ② 1.000 to 1.070		0.1g/100g		0.2g/100g	
Measurement Accuracy	① $\pm 2\%$ * $\pm 1\%$ ② ± 0.001 * ± 0.0005 (10 to 30%)		$\pm 0.2g/100g$ * $\pm 0.1g/100g$ (10 to 30°C)		$\pm 0.2g/100g$ * $\pm 0.1g/100g$ (10 to 30°C)	
International Protection Class	IP65		IP65		IP65	
Size & Weight	3.2x3.4x20.7cm, 110g		3.2x3.4x20.3cm, 105g		3.2x3.4x20.3cm, 105g	

IP65 = dust-tight and protected against water jets (except eye piece)
*Repeatability