

NEPTUNETM

Tools for Life Sciences



Pipette Tips



Tubes



Deep Well Plates



COMMITMENT TO QUALITY

Our tips are manufactured under stringent controls in Neptune's ISO 9001:2008 certified facility. Neptune's advanced manufacturing process continually monitors the quality of products and individual batch testing ensures Neptune products are certified RNase, DNase, DNA and Endotoxin-free.

Test	Product	Assay Description
Function	Tips	Our custom built robotic equipment precisely measures insertion force, checks each tip for vacuum pressure loss, and constantly monitors the function of Neptune tips so that you can be assured of reliable performance.
	Tubes	Neptune tube samples are extensively centrifuged and boil tested to ensure they meet the highest standards.
	Plates	Neptune PCR and microtiter plate dimensions are checked against SBS specifications and vacuum tested on customized fixtures to ensure that each plate is flat and leak-free.
Sterility	Process	Neptune pre-sterile products have undergone electron beam irradiation and bioburden testing by an independent laboratory.
Molecular Purity	Nucleic acids	Neptune products are PCR tested and certified to be free of contaminating nucleic acids.
	Nucleases	Neptune plastics are tested and certified to be free of nucleases, with a test sensitivity level of less than 3.4×10^{-11} Kunitz units of RNase and 1.7×10^{-11} Kunitz units of DNase.
	Endotoxins/Pyrogens	LAL coagulation testing demonstrates these products are free of endotoxins, test sensitivity is 0.06 EU/ml.
Traceability	Process	Each product contains a 5 digit lot number located on the rack, pack and case of each finished good. With Neptune's advanced manufacturing process all raw materials are able to be traced for maximum quality assurance.



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STANCE ON SUSTAINABILITY



What does sustainability mean to you? To Neptune, it means more than just end-point recycling. It means consuming less energy and materials throughout our manufacturing process and offering products that make a clear difference. Among our many initiatives is the use of injection molding machines that consume one-third less energy than standard machines, and our development of eco-friendly racks made of recycled polypropylene that use almost 32% less plastic than the leading competitor. We carry this commitment through to our packaging, as one of the first to use soy ink printing and offering some of the most compact unit packs in the industry. Less packaging not only saves waste, but also space in shipping containers. Neptune brand products not only save energy by being able to ship twice as many products in the same container, but also saves on the shipping cost to the consumer.



Competitor Tray
130.39 Grams



Neptune Tray
89.03 Grams

In order to cut down on landfill waste, Neptune designed eco-friendly racks that are made of recycled polypropylene and are designed to use the least amount of plastic.

To reduce our carbon footprint, Neptune packaging was created to be as compact as possible. When buying a competitor's product, it would require twice as many containers in order to ship the equivalent of Neptune product. Neptune saves energy for our environment and shipping cost for our consumer.





Pipette Tips

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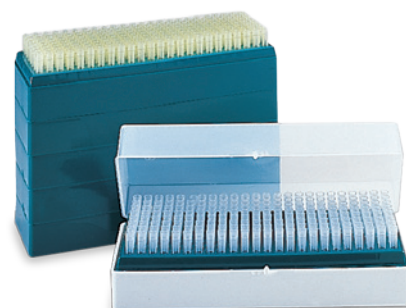
PACKAGING OPTIONS



Bulk



Racked



Rack & Stack



ESP™ Reload System

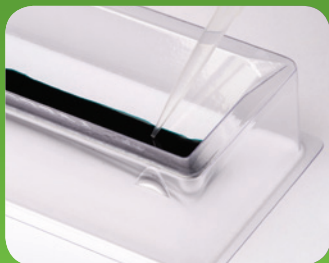


BT-ESP™

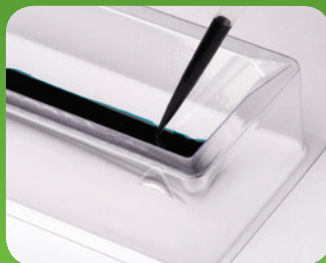




NEPTUNE



Before Pipetting

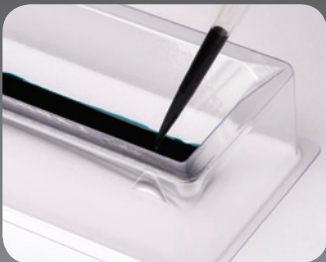
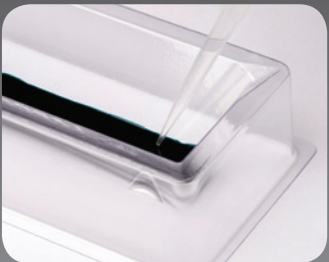


Fluid Drawn



Sample Dispensed

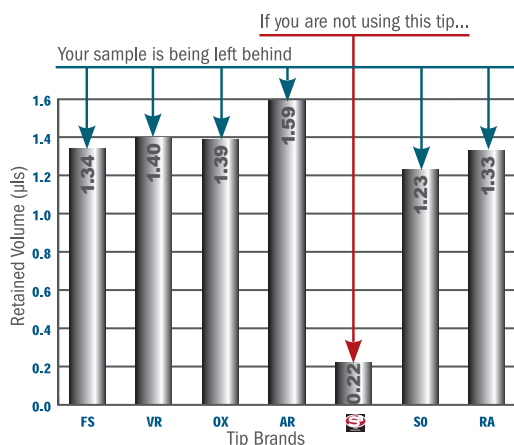
COMPETITION



Neptune's exclusive S³ polymer was designed to increase pipetting accuracy by virtually eliminating tip retention and sample hold-up. S³ pipette tips deliver volumes within 0.1% of the indicated volume, versus 0.7% for standard polymer tips. This provides a more accurate application.

Pipette tips produced from standard polymers will variably retain biological solutions, preventing accurate and repeatable results. Diamond polishing of the mold reduces the number of imperfections, producing a smoother surface. Silicone treatment of tips further reduces retention, but can leach out and interfere with reactions or degrade at autoclaving temperatures.

Neptune was the first to address this challenge with the development of a novel polymer technology that produces a Sample Saving Surface on plastics. Neptune's third generation S³ polymer system results in a surface that virtually eliminates sample hold-up, providing the most accurate and consistent sample delivery possible in the industry.



ESP RELOAD SYSTEM



ESP
ENVIRONMENTALLY
SUSTAINABLE PACK

FEATURES:

- Reload up to 10 trays in 90 seconds
- Requires 57% less storage space
- Reuse existing trays
- Generates 90% less packaging waste
- Available in standard and filtered pipette tip format

The Neptune ESP (Environmentally Sustainable Pack) System was designed to meet industry demands to minimize plastic waste by 90% and provide an environmentally friendly solution. ESP tips provide a low cost alternative compared with racked product, while saving time not having to load bulk tips.

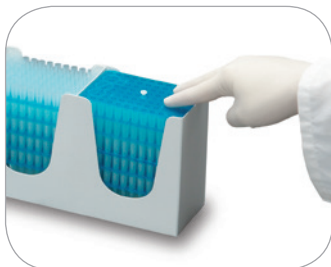
Neptune's revolutionary transfer system allows you to reload your empty trays with new tips in a single movement. The patented transfer card is designed to prevent contamination by minimizing the amount of handling when reloading

empty tip racks. The ESP system fits the widest range of tip trays on the market and is available in both standard and filtered pipette tip reloads. We offer ESP reloads in both pre-sterile and non-sterile formats. Look for the **E** symbol on the pipette chart (under packaging) on pages 8-15.

When buying the ESP system for the first time, be sure to purchase an empty tray (page 20).



Standard ESP System



Engage the alignment plate by firmly pressing down on the plate.



Insert the tips into your empty tray.



Secure plate by firmly pressing on all four corners of the alignment plate.



Firmly depress the release button using your index finger.

1000 μ l Extended Length ESP System



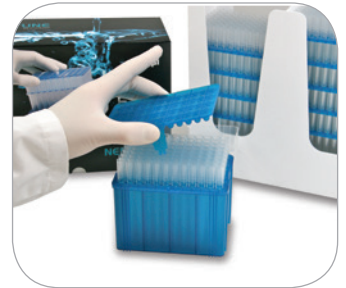
Press down firmly on the alignment plate and engage the side posts into the slots on the insert card.



Hold the alignment card away from the side posts and insert the tips into your empty tray.



Secure plate by firmly pressing on all four corners of the alignment plate.



Squeeze the side posts of the alignment plate and pull up to disengage from the insert card.

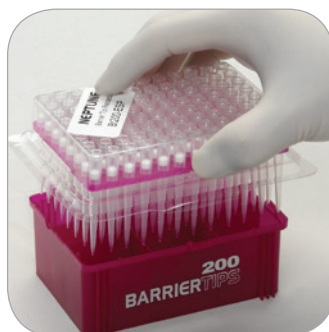
ESP System for Barrier Tips



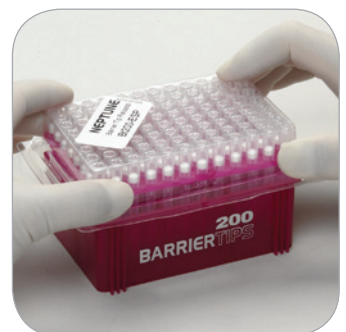
BT-ESP reloads are individually packaged to preserve the integrity of the aerosol barrier.



Remove alignment plate from the packaging base by gripping alignment plate using the upper portion of the clamshell packaging.



Insert the tips into your empty tray.
























Secure plate by firmly pressing on all four corners of the alignment plate.

FILTER TIPS

Neptune Barrier Tips are pre-sterile and tested to be free of:

- DNA
- DNase & RNase
- Endotoxins (Pyrogens)



	Neptune PN	Tip Type	Packaging	Quantity
BT10 Series – 10 µl Filter Tip  <small>Actual Size</small>	BT10		 R	10 trays of 96/pack 5 packs/case
	BT10.N		 R	10 trays of 96/pack 5 packs/case
BT10XL Series – 10 µl Extended Length Filter Tip  <small>Actual Size</small>	BT10XLS3		 R	10 trays of 96/pack 5 packs/case
	BT10XL		 R	10 trays of 96/pack 5 packs/case
BT10E Series – 10 µl Eppendorf™ Style Filter Tip  <small>Actual Size</small>	BT10E		 R	10 trays of 96/pack 5 packs/case
BT10F Series – 10 µl Finn™ Style Filter Tip  <small>Actual Size</small>	BT10F		 R	10 trays of 96/pack 5 packs/case
BT20 Series – 20 µl Filter Tip  <small>Actual Size</small>	BT20		 R	10 trays of 96/pack 5 packs/case
	BT20-ESP		 E	10 inserts of 96/pack 4 packs/case










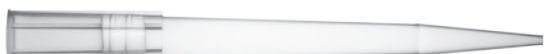




FEATURES  Sample Saving Surface  Pre-Sterile  Natural Polypropylene

PACKAGING OPTIONS  Racked  ESP Reload System Empty rack needed (pg 20)  Bulk



Product Identification

- Increases lot traceability while simultaneously making racks recyclable
- Printed catalog number simplifies the reordering process












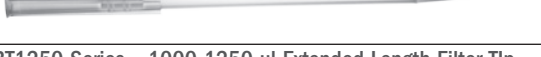
	Neptune PN	Tip Type	Packaging	Quantity
BT100 Series – 100 µl Filter Tip  <small>Actual size</small>	BT100	S³	 R	10 trays of 96/pack
				5 packs/case
BT200 Series – 200 µl Filter Tip  <small>Actual size</small>	BT200	S³	 R	10 trays of 96/pack
	BT200-ESP	S³	 E	5 packs/case
BTXLT Series - 180 µl Extended Length Filter Tip  <small>Tip image has been reduced to 78% of actual size</small>	BTXLT	NP	 R	10 trays of 96/pack
				4 packs/case
BT200XLT Series - 200 µl Extended Length Filter Tip  <small>Tip image has been reduced to 78% of actual size</small>	BT200XLT	NP	 R	8 trays of 96/pack
				4 packs/case
BT300 Series – 300 µl Filter Tip  <small>Actual size</small>	BT300	S³	 R	10 trays of 96/pack
				5 packs/case
BT1000 Series – 1000 µl Filter Tip  <small>Tip image has been reduced to 85% of actual size</small>	BT1000.96	S³	 R	8 trays of 96/pack
	BT1000.96.N	NP	 R	4 packs/case
BT1250 Series – 1000-1250 µl Extended Length Filter Tip  <small>Tip image has been reduced to 72% of actual size</small>	BT1250	S³	 R	8 trays of 96/pack
	BT1250.N	NP	 R	4 packs/case

FEATURES **S³** Sample Saving Surface  Pre-Sterile **NP** Natural Polypropylene

PACKAGING OPTIONS **R** Racked **E** ESP Reload System **B** Bulk
Empty rack needed (pg 20)

FILTER TIP COMPATIBILITY CHART

Neptune pipette tips are compatible with a broad range of industry leading pipettes. The table below represents compatibility among the more recognized brands on the market. Compatibility is determined based on fit and function. Tip fit is determined by the ability to mount and eject Neptune tips onto the pipette. Function is determined by the ability to calibrate the pipette within the manufacturer's specifications using Neptune tips. For more information on tip compatibility, visit www.neptunescientific.com.

Pipettor Brand/Model	Sartorius/Biohit eLINE®	Sartorius/Biohit Proline® Plus	Transferpette® S	Transferpette® electronic	Capp® Bravo	Eppendorf Reference®	Eppendorf Research®
BT10 Series – 10 µl Filter Tip 			0.5-10 µl		0.5-10 µl	0.5-10 µl	0.5-10 µl
BT10XL Series – 10 µl Extended Length Tip 			0.5-10 µl		0.5-10 µl	0.1-2.5 µl 0.5-10 µl	0.1-2.5 µl 0.5-10 µl
BT10E Series – 10 µl Eppendorf™ Style Filter Tip 			0.5-10 µl		0.5-10 µl	0.1-2.5 µl 0.5-10 µl	0.1-2.5 µl 0.5-10 µl
BT10F Series – 10 µl Finn™ Style Filter Tip 	M100 M200	10-100 µl 20-200 µl	2-20 µl 10-100 µl 20-200 µl	15-300 µl	5-50 µl 10-100 µl 30-300 µl	2-20, 10-100, 50-200 µl	2-20 µl 10-100 µl 20-200 µl 30-300 µl
BT20 Series – 20 µl Filter Tip 	M100 M200	10-100 µl 20-200 µl	2-20 µl 10-100 µl 20-200 µl	15-300 µl	5-50 µl 10-100 µl 30-300 µl	2-20, 10-100, 50-200 µl	2-20 µl 10-100 µl 20-200 µl 30-300 µl
BT100 Series – 100 µl Filter Tip 	M100 M200	20-200 µl	20-200 µl	15-300 µl	5-50 µl 10-100 µl 30-300 µl	50-200 µl	20-200 µl 30-300 µl
BT200 Series – 200 µl Filter Tip 	M100 M200	20-200 µl	20-200 µl	15-300 µl	5-50 µl 10-100 µl 30-300 µl	50-200 µl	20-200 µl 30-300 µl
BTXLT - 180 µl Filter Tip 	M100	20-200 µl	20-200 µl	15-300 µl	5-50 µl 10-100 µl	50-200 µl	20-200 µl
BT200XLT Series - 200 µl Extended Length Filter Tip 	M100 M200	20-200 µl	20-200 µl	15-300 µl	5-50 µl 10-100 µl 30-300 µl	50-200 µl	20-200 µl 30-300 µl
BT300 Series – 300 µl Filter Tip 	M100 M200	20-200 µl	20-200 µl	15-300 µl	5-50 µl 10-100 µl 30-300 µl	50-200 µl	20-200 µl 30-300 µl
BT1000 Series – 1000 µl Filter Tip 			100 - 1000 µl		100 - 1000 µl	100 - 1000 µl	100- 1000 µl
BT1250 Series – 1000-1250 µl Extended Length Filter Tip 			100 - 1000 µl		100 - 1000 µl	100 - 1000 µl	100- 1000 µl











Eppendorf Research® Plus	Finnpipette™	Finnpipette™ Electronic	Finnpipette™ F1	Gilson® PIPETMAN® L	Hamilton® SoftGrip	BioPette™ A	Nichiryo Nichipet EX II	Socorex Calibra® digital 822	VWR Signature™ Ergonomic High Performance	VWR® Ultra High Performance
0.5-10 µl	0.5-10 µl 5-50 µl	1-10 µl	1-10 µl	P2 P10	0.2-2 µl 1-10 µl		0.5-10 µl	1-10 µl		0.1-2 µl 0.5-10 µl
0.1-2.5 µl 0.5-10 µl	0.5-10 µl 5-50 µl	1-10 µl	1-10 µl	P2 P10	0.2-2 µl 1-10 µl		0.5-10 µl	1-10 µl		0.1-2 µl 0.5-10 µl
0.1-2.5 µl 0.5-10 µl	0.5-10 µl 5-50 µl	1-10 µl	1-10 µl	P2 P10	0.2-2 µl 1-10 µl		0.5-10 µl	1-10 µl		0.1-2 µl 0.5-10 µl
2-20 µl 10-100 µl	2-20 µl 5-50 µl 20-200 µl 30-300 µl	30-300 µl		P20 P100 P200	2.5-25 µl 10-100 µl 30-300 µl		2-20 µl 10-100 µl 20-200 µl	10-100 µl 20-200 µl	2-20 µl 20-200 µl	2-20 µl 10-100 µl 20-200 µl
2-20 µl 10-100 µl	2-20 µl 5-50 µl 20-200 µl 30-300 µl	30-300 µl		P20 P100 P200	2.5-25 µl 10-100 µl 30-300 µl		2-20 µl 10-100 µl 20-200 µl	10-100 µl 20-200 µl	2-20 µl 20-200 µl	2-20 µl 10-100 µl 20-200 µl
50-200 µl	5-50 µl 20-200 µl 30-300 µl	30-300 µl		P200	2.5-25 µl 10-100 µl 30-300 µl		20-200 µl	20-200 µl	20-200 µl	20-200 µl
50-200 µl	5-50 µl 20-200 µl 30-300 µl	30-300 µl		P200	2.5-25 µl 10-100 µl 30-300 µl		20-200 µl	20-200 µl	20-200 µl	20-200 µl
50-200 µl	5-50 µl 20-200 µl	30-300 µl		P100	2.5-25 µl 10-100 µl		20-200 µl	20-200 µl	20-200 µl	20-200 µl
50-200 µl	5-50 µl 20-200 µl 30-300 µl	30-300 µl		P200	2.5-25 µl 10-100 µl 30-300 µl		20-200 µl	20-200 µl	20-200 µl	20-200 µl
50-200 µl	5-50 µl 20-200 µl 30-300 µl	30-300 µl		P200	2.5-25 µl 10-100 µl 30-300 µl		20-200 µl	20-200 µl	20-200 µl	20-200 µl
100- 1000 µl	100 - 1000 µl 200 - 1000 µl	100 - 1200 µl		P1000	100 - 1000 µl	100 - 1200 µl	100 - 1000 µl	100 - 1000 µl	100 - 1000 µl	100 - 1000 µl
100- 1000 µl	100 - 1000 µl 200 - 1000 µl	100 - 1200 µl		P1000	100 - 1000 µl	100 - 1200 µl	100 - 1000 µl	100 - 1000 µl	100 - 1000 µl	100 - 1000 µl








PIPETTE TIPS



FEATURES:

- Eco-friendly racks designed for minimum plastic consumption
- Easy-insertion, easy-ejection
- S³ technology assures the highest recovery of your precious sample

	Neptune PN	Tip Type	Packaging	Quantity
2040 Series – 10 µl Micro Tip  <small>Actual size</small>	2040	S ³	B	1000 tips/bag 20 bags/case
	2040.N	NP	B	1000 tip/bag 20 bags/case
	2042	S ³	R	10 trays of 96/pack 5 packs/case
	2042.S	S ³	 R	10 trays of 96/pack 5 packs/case
	2042.N	NP	R	10 trays of 96/pack 5 packs/case
	2042.NS	NP	 R	10 trays of 96/pack 5 packs/case
	2047	S ³	E	20 cards of 96/pack 4 packs/case
	2047.S	S ³	 E	20 cards of 96/pack 4 packs/case
	2047.N	NP	E	20 cards of 96/pack 4 packs/case
	2047.NS	NP	 E	20 cards of 96/pack 4 packs/case
2340 Series – 10 µl Extended Length Tip  <small>Actual size</small>	2340	NP	B	1000 tips/bag 20 bags/case
	2342	NP	R	10 trays of 96/pack 5 packs/case
	2342.S	NP	 R	10 trays of 96/pack 5 packs/case
	2340S3	S ³	B	1000 tips/bag 20 bags/case
	2342S3	S ³	R	10 trays of 96/pack 5 packs/case
	2342S3.S	S ³	 R	10 trays of 96/pack 5 packs/case
	2347	S ³	E	10 cards of 96/pack 10 packs/case
	2347.S	S ³	 E	10 cards of 96/pack 10 packs/case
	2347.N	NP	E	10 cards of 96/pack 10 packs/case
	2347.NS	NP	 E	10 cards of 96/pack 10 packs/case

	Neptune PN	Tip Type	Packaging	Quantity
2140 Series – 10 µl Eppendorf™ Style Tip  <i>Actual size</i>	2140	S³	B	1000 tips/bag 20 bags/case
	2142	S³	R	10 trays of 96/pack 5 packs/case
	2142.S	S³	 R	10 trays of 96/pack 5 packs/case
2100 Series – 200 µl Universal Tip  <i>Actual size</i>	2100.N	NP	B	1000 tips/bag 10 bags/case
	2100	S³	B	1000 tips/bag 10 bags/case
	2102.N	NP	R	10 trays of 96/pack 5 packs/case
	2102.NS	NP	 R	10 trays of 96/pack 5 packs/case
	2102	S³	R	10 trays of 96/pack 5 packs/case
	2102.S	S³	 R	10 trays of 96/pack 5 packs/case
	2101.N	NP	RS	5 inserts of 192/pack 5 packs/case
	2101	S³	RS	5 inserts of 192/pack 5 packs/case
	2107.N	NP	E	10 cards of 96/pack 10 packs/case
	2107	S³	E	10 cards of 96/pack 10 packs/case
	2107.S	S³	 E	10 cards of 96/pack 10 packs/case
2100 Series – 200 µl Yellow Universal Tip  <i>Actual size</i>	2100.YN	NP	B	1000 tips/bag 10 bags/case
	2100.Y	S³	B	1000 tips/bag 10 bags/case

FEATURES **S³** Sample Saving Surface

 Pre-Sterile

NP Natural Polypropylene











PACKAGING OPTIONS **R** Racked

RS Rack & Stack









E ESP Reload System
Empty rack needed (pg 20)

B Bulk

PIPETTE TIPS

	Neptune PN	Tip Type	Packaging	Quantity
2016 Series – 200 µl Extended Length Gel Tip  <small>Actual size</small>	2016	NP	R	5 racks of 204/pack 5 packs/case
	2016.S	NP	 R	5 racks of 204/pack 5 packs/case
2150 Series – 200 µl Extended Length Tip  <small>Tip image has been reduced to 78% of actual size</small>	2152.96.N	NP	R	8 trays of 96/pack, 4 packs/case
	2152.96.NS	NP	 R	8 trays of 96/pack, 4 packs/case
2090 Series – 300 µl Universal Tip  <small>Actual size</small>	2090.N	NP	B	1000 tips/bag 10 bags/case
	2090	S ³	B	1000 tips/bag 10 bags/case
	2092.N	NP	R	10 trays of 96/pack 5 packs/case
	2092.NS	NP	 R	10 trays of 96/pack 5 packs/case
	2092	S ³	R	10 trays of 96/pack 5 packs/case
	2092.S	S ³	 R	10 trays of 96/pack 5 packs/case
	2097.N	NP	E	10 cards of 96/pack 10 packs/case
	2097.NS	NP	 E	10 cards of 96/pack 10 packs/case
	2097	S ³	E	10 cards of 96/pack 10 packs/case
	2097.S	S ³	 E	10 cards of 96/pack 10 packs/case
2110 Series – 1000 µl Blue Traditional Shaped Tip  <small>Tip image has been reduced to 84% of actual size</small>	2110.B	NP	B	1000 tips/bag 4 bags/case

FEATURES S³ Sample Saving Surface  Pre-Sterile NP Natural Polypropylene
PACKAGING OPTIONS R Racked E ESP Reload System
Empty rack needed (pg 20) B Bulk

	Neptune PN	Tip Type	Packaging	Quantity
2160 Series – 1000 µl Universal Tip  <small>Tip image is 85% of actual size</small>	2160	NP	B	1000 tips/bag 4 bags/case
	2162.96	NP	R	8 racks of 96 tips/pack, 4 packs/case
	2162.96.S	NP	 R	8 racks of 96 tips/pack, 4 packs/case
	2167.96	NP	E	10 cards of 96 tips/pack 5 packs/case
	2167.96.S	NP	 E	10 cards of 96 tips/pack 5 packs/case
2370 Series – 1000-1250 µl Extended Length Tip  <small>Tip image is 72% of actual size</small>	2370	S ³	B	1000 tips/bag 4 bags/case
	2370.N	NP	B	1000 tips/bag 4 bags/case
	2372.N	NP	R	8 trays of 96/pack 4 packs/case
	2372.NS	NP	 R	8 trays of 96/pack 4 packs/case
	2372	S ³	R	8 trays of 96/pack 4 packs/case
	2372.S	S ³	 R	8 trays of 96/pack 4 packs/case
	2377.N	NP	E	10 cards of 96/pack 5 packs/case
	2377.NS	NP	 E	10 cards of 96/pack 5 packs/case
	2377	S ³	E	10 cards of 96/pack 5 packs/case
	2377.S	S ³	 E	10 cards of 96/pack 5 packs/case

FEATURES  Sample Saving Surface  Pre-Sterile  Natural Polypropylene




PACKAGING OPTIONS  Racked  ESP Reload System  Bulk

Empty rack needed (pg 20)

PIPETTE TIP COMPATIBILITY CHART

*Pipette tip series marked with asterisk are not compatible with multichannel pipettors.

Compatibility is determined by fit of tip onto the pipettor, and the ability to meet manufacturer's specification when pipettors are calibrated with tip.

Pipettor Brand/Model	Sartorius/Biohit mLINE®	Sartorius/Biohit Proline® Plus	Transferpette® S	Transferpette® electronic	Capp® Bravo	Eppendorf Reference®	Eppendorf Research®	Eppendorf Research® Plus
2040 Series – 10 µl Micro Tip 			0.5-10 µl		0.5-10 µl	0.1-2.5 µl 0.5-10 µl	0.1-2.5 µl 0.5-10 µl	0.1-2.5 µl 0.5-10 µl
2340 Series – 10 µl Extended Length Tip 	M10		0.5-10 µl		0.5-10 µl	0.1-2.5 µl 0.5-10 µl 2-20µl	0.1-2.5 µl 0.5-10 µl	0.1-2.5 µl 0.5-10 µl
2140 Series – 10 µl Eppendorf™ Style Tip 	M10		0.5-10 µl		0.5-10 µl	0.1-2.5 µl 0.5-10 µl 2-20µl	0.1-2.5 µl 0.5-10 µl	0.1-2.5 µl 0.5-10 µl
2100 Series – 200 µl Universal Tip 	M100 M200	10-100 µl 20-200 µl	2-20 µl 10-100 µl 20-200 µl	15-300 µl	5-50 µl 10-100 µl 30-300 µl	2-20 10-100 50-200 µl	2-20 µl 10-100 µl 20-200 µl 30-300 µl	2-20 µl 10-100 µl
2016 Series – 200 µl Extended Length Gel Tip* 	M100 M200	10-100 µl 20-200 µl	2-20 µl 10-100 µl 20-200 µl	15-300 µl	5-50 µl 10-100 µl 30-300 µl	2-20 µl 10-100 µl 50-200 µl	2-20 µl 10-100 µl 20-200 µl 30-300 µl	2-20 µl 10-100 µl
2150 Series – 200 µl Extended Length Tip* 	M100 M200	10-100 µl 20-200 µl	2-20 µl 10-100 µl 20-200 µl	15-300 µl	10-100 µl 30-300 µl	2-20 µl 10-100 µl 50-200 µl	2-20 µl 10-100 µl 20-200 µl 30-300 µl	2-20 µl 10-100 µl
2090 Series – 300 µl Universal Tip 	M100 M200 M300	10-100 µl 20-200 µl 30-300 µl	20-200 µl	15-300 µl	5-50 µl 10-100 µl 30-300 µl	50-200 µl	20-200 µl 30-300 µl	50-200 µl
2110 Series – 1000 µl Traditional Shaped Tip* 	M1000		100 - 1000 µl		100 - 1000 µl	100- 1000 µl	100- 1000 µl	100- 1000 µl
2160 Series – 1000 µl Universal Tip* 	M1000		100 - 1000 µl		100 - 1000 µl	100- 1000 µl	100- 1000 µl	100- 1000 µl
2370 Series – 1000-1250 µl Extended Length Tip 	M1000		100 - 1000 µl		100 - 1000 µl	100- 1000 µl	100- 1000 µl	100- 1000 µl

Eppendorf Xplorer®/ Xplorer® plus	Finnpipette™	Finnpipette™ F2	Finnpipette™ Digital	Finnpipette™ F1	Gilson® PIPETMAN® L	Hamilton® SoftGrip	BioPette™ A	Nichiryo Nichipet EX II	Socorex Calibra® digital 822	VWR Signature™ Ergonomic High Performance	VWR® Ultra High Performance
	0.5-10 µl 5-50 µl		1-10 µl 0.5-10 µl	0.2-2 µl 1-10 µl	P2 P10	0.2-2 µl 1-10 µl		0.5-10 µl	1-10 µl		0.1-2 µl 0.5-10 µl
	0.5-10 µl 5-50 µl		1-10 µl 0.5-10 µl	0.2-2 µl 1-10 µl	P2 P10	0.2-2 µl 1-10 µl		0.5-10 µl	1-10 µl		0.1-2 µl 0.5-10 µl
	0.5-10 µl 5-50 µl		1-10 µl	0.2-2 µl 1-10 µl	P2 P10	0.2-2 µl 1-10 µl		0.5-10 µl	1-10 µl		0.1-2 µl 0.5-10 µl
	2-20 µl 5-50 µl 20-200 µl 30-300 µl	2-20 µl 5-50 µl 10-100 µl 20-200 µl	5-50 µl 20-200 µl 30-300 µl	2-20 µl 5-50 µl 20-200 µl	P20 P100 P200	2.5-25 µl 10-100 µl 30-300 µl		2-20 µl 10-100 µl 20-200 µl	10-100 µl 20-200 µl	2-20 µl 20-200 µl	2-20 µl 10-100 µl 20-200 µl
	2-20 µl 5-50 µl 20-200 µl 30-300 µl		30-300 µl		P20 P100 P200	2.5-25 µl 10-100 µl 30-300 µl		2-20 µl 10-100 µl 20-200 µl	10-100 µl 20-200 µl	2-20 µl 20-200 µl	2-20 µl 10-100 µl 20-200 µl
	5-50 µl 20-200 µl 30-300 µl		30-300 µl		P100 P200	2.5-25 µl 10-100 µl 30-300 µl		10-100 µl 20-200 µl	10-100 µl 20-200 µl	20-200 µl	10-100 µl 20-200 µl
15- 300µl	5-50 µl 20-200 µl 30-300 µl		30-300 µl 50-300 µl	30-300 µl	P200	2.5-25 µl 10-100 µl 30-300 µl		20-200 µl	20-200 µl	2-20 µl 20-200 µl	2-20 µl 10-100 µl 20-200 µl
50- 1000µl	100- 1000 µl 200- 1000 µl	100 - 1000 µl	100 - 1200 µl	100 - 1000 µl	P1000	100 - 1000 µl	100 - 1200 µl	100 - 1000 µl	100 - 1000 µl	100 - 1000 µl	100 - 1000 µl
50- 1000µl	100- 1000 µl 200- 1000 µl	100 - 1000 µ	100 - 1200 µl	100 - 1000 µl	P1000	100 - 1000 µl	100 - 1200 µl	100 - 1000 µl	100 - 1000 µl	100 - 1000 µl	100 - 1000 µl
50- 1000µl	100- 1000 µl 200- 1000 µl	100 - 1000 µl	100 - 1200 µl	100 - 1000 µl	P1000	100 - 1000 µl	100 - 1200 µl	100 - 1000 µl	100 - 1000 µl	100 - 1000 µl	100 - 1000 µl



SPARE TRAYS



Manufactured from recycled polypropylene and developed to use the least amount of plastic. These spare trays are designed to fit Neptune's 10 µl, 10XL, 20 µl, 200 µl, 300 µl, 1000 µl and 1000XL pipette tips.

FEATURES:

- *Recyclable tray*
- *Maximum space saving design*
- *Less waste – reduce plastic waste by up to 90% over conventional trays in combination with our patented ESP reload system*

Neptune PN	Packaging	Quantity	Compatible Tips
2042.T	Tray with insert card for bulk tips	1 tray 50 trays/case	2040 Series
2047.T	Tray without insert card for ESP reload	1 tray 48 trays/case	2040 Series
2342.T	Tray with insert card for bulk tips	1 tray 50 trays/case	2340 Series 2140 Series
2347.T	Tray without insert card for ESP reload	1 tray 50 trays/case	2340 Series
2102.T	Tray with insert card for bulk tips	1 tray 50 trays/case	2100 Series
2107.T	Tray without insert card for ESP reload	1 tray 48 trays/case	2100 Series BT20 Series
2092.T	Tray with insert card for bulk tips	1 tray 50 trays/case	2090 Series
2097.T	Tray without insert card for ESP reload	1 tray 50 trays/case	2090 Series BT200 Series
2162.T	Tray with insert card for bulk tips & ESP reload	1 tray 30 trays/case	2110 Series 2160 Series
2372.T	Tray with insert card for bulk tips	1 tray 32 trays/case	2370 Series
2377.T	Tray without insert card for ESP reload	1 tray 32 trays/case	2370 Series



Tubes

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TUBES OVERVIEW



**0.6 ml
Microcentrifuge
Tubes**

page 23



**1.6 ml
Microcentrifuge
Tubes**

page 23



**2.0 ml
Microcentrifuge
Tubes**

page 23



0.2 ml PCR Tubes

pages 25-26



Cryotubes & Cryovials

page 24

Microcentrifuge Tubes

Neptune offers a full line of quality tubes for laboratory use. Neptune microcentrifuge tubes are ideal for a wide array of laboratory procedures and can withstand up to 20,000 RCF. We also offer a fine selection of cryovials and cryotubes designed for cryogenic sample storage. Available with and without locking bases, these tubes feature special thread designs and silicone o-rings to ensure sample viability for long term storage.

Minitube System

The minitube system by Neptune is designed for labs in need of the functionality of a tube, but require the 96-well format for robotics. The system features a standard 8 x 12 format with pre-racked 1.1 ml single or 8 strip mini-tubes. Product is available in both pre-sterile and non-sterile formats.

PCR Tubes

Neptune offers a collection of high quality 0.2 to 0.6 ml thin walled tubes specifically manufactured for PCR applications. Thin walled tubes improve conduction between the PCR reaction and the thermal cycler block, improving cycling efficiency. The clarity of the thin walled tubes enables visualization of components being mixed. Our strip tubes are available with attached caps to reduce splash and cross contamination, or with detached caps for high throughput labs.

All of our pre-sterile packaged products are electron beam irradiated and are certified RNase, DNase and Endotoxin free.



MICROCENTRIFUGE TUBES


0.6, 1.6, and 2.0 ml Microcentrifuge Tubes

These flat-cap graduated tubes are frosted on the top and sides for convenient sample labeling. Graduations from 0.1 ml to 2.0 ml make them ideal for many uses. Assorted colors are mixed in a unit pack.



FEATURES:

- Labeled graduations at 100 μ l
- Spin: 20,000 RCF
- Frosted side & cap for sample labeling
- Made of virgin polypropylene
- Flat Cap
- DNase, RNase and Endotoxin-Free
- Autoclavable (121°C, 15 psi, 15 minutes)

	Neptune PN	Tube Type	Packaging	Quantity
0.6 ml Graduated Microcentrifuge Tubes  <small>Actual size</small>	3735.X	NP	B TC	1000 tubes/pack 10 packs/case
	3735.A.X	NP AC	B TC	1000 tubes/pack 10 bags/case
	3735.S.X	NP	Pre-Sterile B TC	500 tubes/pack 10 bags/case
	3735.AS.X	NP AC	Pre-Sterile B TC	500 tubes/pack 10 packs/case
1.6 ml Graduated Microcentrifuge Tubes – Easy Seal Series  <small>Tube image is 80% of actual size</small>	4445.X	NP	B TC	500 tubes/pack 10 packs/case
	4445.A.X	NP AC	B TC	10 bags of 50 tubes/pack 10 packs/case
	4445.S.X	NP	Pre-Sterile B TC	10 bags of 50 tubes/pack 10 packs/case
	4445.AS.X	NP AC	Pre-Sterile B TC	10 bags of 50 tubes/pack 10 packs/case
1.6 ml Graduated Microcentrifuge Tubes – Tight Seal Series  <small>Tube image is 80% of actual size</small>	3745.X	NP	B TC	500 tubes/pack 10 packs/case
	3745.A.X	NP AC	B TC	500 tubes/pack 10 packs/case
	3745.S.X	NP	Pre-Sterile B TC	250 tips/pack 10 packs/case
	3745.AS.X	NP AC	Pre-Sterile B TC	250 tubes/pack 10 packs/case
2.0 ml Graduated Microcentrifuge Tubes  <small>Actual size</small>	3765.X	NP	B TC	500 tubes/pack 10 bags/case
	3765.A.X	NP AC	B TC	500 tubes/pack 10 bags/case
	3765.S.X	NP	Pre-Sterile B TC	250 tubes/pack 10 packs/case








FEATURES  Pre-Sterile  Natural Polypropylene  Assorted Colors: Blue, Green, Yellow, Orange, Red, Lavender

PACKAGING  Bulk  Tubes & Caps  Assorted Colors: Blue, Green, Yellow, Red, Lavender

CRYOTUBES & CRYOVIALS

Cryotubes








Neptune cryotubes with locking bases offer significant advantages over traditional cryovial storage. Neptune cryotubes are manufactured from virgin polypropylene with silicone O-rings to seal at temperatures from -196 to $+121^{\circ}\text{C}$. Dimensions: 0.51 x 1.85 in. (13 x 47 mm)

	Neptune PN	Tube Type	Packaging	Quantity
0.5 ml 	3470.X	NP	 B TC	10 bags of 50/case
1.5 ml 	3471.X	NP	 B TC	10 bags of 50/case
1.8 ml 	3472.X	NP	 B TC	10 bags of 50/case
 Cap Inserts Assorted Colors	3121.A.X	AC	B	500 inserts/case

FEATURES  Pre-Sterile  Natural Polypropylene **PACKAGING** **B** Bulk **TC** Tubes & Caps  Assorted Colors

Cryovials

Neptune cryovials are designed for the storage of biological material at temperatures as low as -190°C . The cap features a long skirt for one hand aseptic techniques and a specially designed lip inside the cap ensures a leak-proof seal. The cap and tube are made of virgin polypropylene with matched thermal coefficients to further ensure leak-proof performance. Diameter: 0.492 in. (12.5 mm) Autoclavable

	Neptune PN	Tube Type	Packaging	Quantity
2.0 ml 	3102.X	NP	 B TC	100 tubes/bag 10 bags/case
3.0 ml 	3103.X	NP	 B TC	100 tubes/bag 10 bags/case
4.0 ml 	3104.X	NP	 B TC	100 tubes/bag 10 bags/case
 Cap Inserts Assorted Colors	3120.A.X	AC	B	500 inserts/case


FEATURES  Pre-Sterile Using gamma radiation  Natural Polypropylene **PACKAGING** **B** Bulk **TC** Tubes & Caps  Assorted Colors

PCR TUBES



Our Neptune 0.2 ml microtubes for PCR are made of high quality virgin polypropylene and feature thin walls for efficient heat transfer. They are available in single tube format, strip tubes with attached caps and with separate caps. Neptune PCR tubes are compatible with most leading thermal cyclers. Tubes and caps are available in assorted colors.

FEATURES:

- Thin walled tube for best heat transfer
- Made of virgin polypropylene
- Domed and flat caps available
- DNase, RNase and Endotoxin-Free

	Neptune PN	Tube Type	Packaging	Quantity
0.2 ml PCR Tubes with Flat Cap 	3423.X	NP CL	B TC	1000 tubes/pack 10 packs/case
	3423.A.X	NP AC	B TC	10 bags of 100/pack 10 packs/case
	3423.S.X	NP CL	* B TC	10 bags of 100/pack 10 packs/case
	3423.AS.X	NP AC	* B TC	10 bags of 100/pack 10 packs/case
	3425.X	NP CL	B TC	1000 tubes/pack 10 packs/case
	3425.A.X	NP AC	B TC	10 bags of 100/pack 10 packs/case
	3425.S.X	NP CL	* B TC	10 bags of 100/pack 10 packs/case
	3425.AS.X	NP AC	* B TC	10 bags of 100/pack 10 packs/case
0.6 ml PCR Tubes with Flat Cap 	3737.X	NP CL	B TC	1000 tubes/pack 10 packs/case
	3737.A.X	NP AC	B TC	1000 tubes/pack 10 packs/case
	3737.S.X	NP CL	* B TC	1000 tubes/pack 10 packs/case
	3737.AS.X	NP AC	* B TC	1000 tubes/pack 10 packs/case
0.2 ml PCR 8-Strip Tubes with attached Domed Cap 	3428.8.X	NP CL	B TC	10 bags of 12/pack 10 packs/case
	3428.8A.X	NP AC	B TC	10 bags of 12/pack 10 packs/case
	3728.8S.X	NP CL	* B TC	10 bags of 12/pack 10 packs/case
	3728.8AS.X	NP AC	* B TC	10 bags of 12/pack 10 packs/case

FEATURES * Pre-Sterile NP Natural Polypropylene CL Clear AC Assorted Colors: Blue, Green, Lavender, Red, Yellow
PACKAGING OPTIONS B Bulk T Tubes Only C Caps Only TC Tubes & Caps AC Assorted Colors: Blue, Orange, Lavender, Red, Yellow

	Neptune PN	Tube Type	Packaging	Quantity
0.2 ml PCR 8-Strip Tubes with Separate Strip Caps 	3426.8.X	NP CL	B T	5 bags of 25/pack 10 packs/case
	3426.8A.X	NP AC	B T	5 bags of 25/pack 10 packs/case
	3426.8S.X	NP CL	* B T	5 bags of 25/pack 10 packs/case
	3426.8AS.X	NP AC	* B T	5 bags of 25/pack 10 packs/case
	3427.8.X	NP CL	B C	125 strip caps/pack* 10 packs/case
	3427.8A.X	NP AC	B C	125 strip caps/pack* 10 packs/case
	3427.8S.X	NP CL	* B C	125 strip caps/pack* 10 packs/case
	3427.8AS.X	NP AC	* B C	125 strip caps/pack* 10 packs/case
	3459.8.X	NP CL	B TC	5 bags of 25/pack 10 packs/case
0.2 ml PCR 12-Strip Tubes with Separate Strip Caps 	3426.12.X	NP CL	B T	80 strip tubes/pack 10 packs/case
	3426.12A.X	NP AC	* B T	80 strip tubes/pack 10 packs/case
	3726.12S.X	NP CL	* B T	80 strip tubes/pack 10 packs/case
	3726.12AS.X	NP AC	* B T	80 strip tubes/pack 10 packs/case
	3427.12.X	NP CL	B C	80 strip caps/pack 10 packs/case
	3427.12A.X	NP AC	B C	80 strip tubes/pack 10 packs/case
	3727.12S.X	NP CL	* B C	80 strip caps/pack 10 packs/case
	3727.12AS.X	NP AC	* B C	80 strip tubes/pack 10 packs/case


FEATURES * Pre-Sterile NP Natural Polypropylene CL Clear AC Assorted Colors: Blue, Green, Lavender, Red, Yellow
 *Each pack includes 10 bags of 12 strips, and 1 bag of 5 strips

PACKAGING OPTIONS B Bulk T Tubes Only C Caps Only TC Tubes & Caps AC Assorted Colors: Blue, Orange, Lavender, Red, Yellow

Minitube System

This system provides you with pre-racked 1.1 ml minitubes in standard 96-well format, with single tubes or strips of 8. This is an ideal system for microplate-to-tube transfer, and features a standard 8 x 12 format. The alphanumeric labeled, non-reversing rack and lid ensure positive sample identification. Condensation rings above







each tube minimize cross contamination between wells, and the system is completely autoclavable (except for optional mini-cap strips). The rack base is fully compatible with popular robotic instruments.

	Neptune PN	Tube Type	Packaging	Quantity
	2600.X	NP	B T	960 tubes/bag 5 bags/case
	2600.8.X	NP	B T	120 strips/bag 5 bags/case
	2601.X	NP	R T	10 trays of 96/pack 5 packs/case
	2601.S.X	NP	☼ R T	10 trays of 96/pack 5 packs/case
	2601.8.X	NP	R T	10 trays of 96/pack 5 packs/case
	2601.8S.X	NP	☼ R T	10 trays of 96/pack 5 packs/case
	2602.8.X	NP	B C	120 strip caps/pack 5 packs/case
	2602.8S.X	NP	☼ B C	120 strip caps/pack 5 packs/case

FEATURES ☼ Pre-Sterile NP Natural Polypropylene **PACKAGING** B Bulk R Racked C Caps Only T Tubes Only

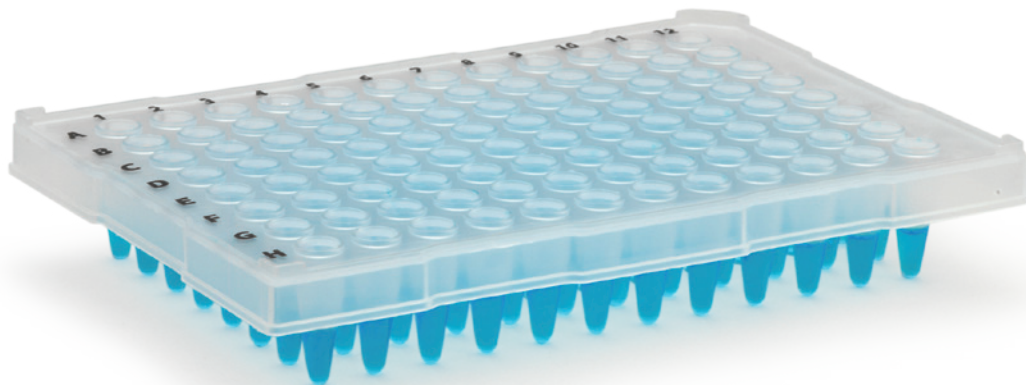
Screw Cap Microtubes

TPE seals on Neptune screw cap microtubes ensure a positive leak-proof seal, retaining sample integrity under the most challenging conditions. They are ideal for freezer storage, centrifugation to over 20,000 RCF, and fit most standard microcentrifuge rotors.

	Neptune PN	Tube Type	Packaging	Quantity
0.5 ml 	3733.S.X	NP	☼ B TC	250 tubes/bag 10 bags/case
1.5 ml 	3743.S.X	NP	☼ B TC	250 tubes/bag 10 bags/case
2.0 ml 	3763.S.X	NP	☼ B TC	250 tubes/bag 10 bags/case
0.5 ml 	3734.S.X	NP	☼ B TC	250 tubes/bag 10 bags/case
1.5 ml 	3744.S.X	NP	☼ B TC	250 tubes/bag 10 bags/case
2.0 ml 	3764.S.X	NP	☼ B TC	250 tubes/bag 10 bags/case

FEATURES ☼ Pre-Sterile NP Natural Polypropylene **PACKAGING** B Bulk TC Tubes & Caps

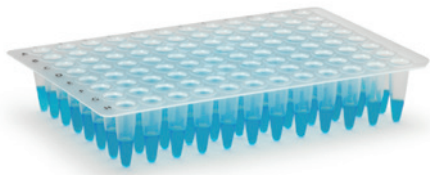
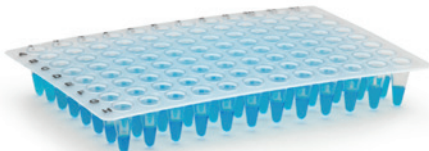

PCR PLATES



PCR Plates

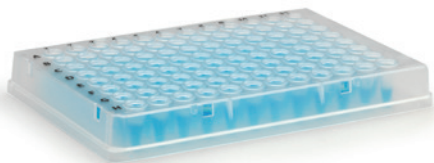
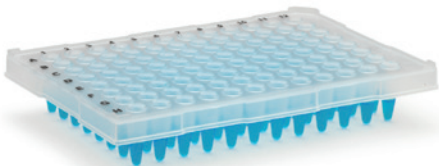

Neptune offers an expansive line of plates for high throughput PCR and related lab procedures.

All PCR plates are molded from high performance polypropylene and feature thin walls for efficient heat transfer. Compatible with many of the latest thermal cyclers on the market, our Neptune PCR plates are available in 96-well low profile, non-skirted, semi-skirted and fully skirted versions. Please refer to our plate selection chart (see pages 30-31) for specific thermal cycler compatibility.

	Neptune PN	Packaging	Quantity
Full Profile Plate 	3730.X	B	10 plates/pack 10 packs/case
Low Profile Plate 	3438.X	B	20 plates/pack 5 packs/case
8 Strip Caps for PCR plates 	3731.X	B	125 strips/pack
			10 packs/case

PACKAGING **B** Bulk

Please refer to the PCR plate compatibility chart on pages 30-31

	Neptune PN	Packaging	Quantity
Fully Skirted Plate 	3732.X	B	10 plates/pack 10 packs/case
Semi Skirted Plate 	3742.X	B	10 plates/pack 10 packs/case
8 Strip Caps for PCR plates 	3731.X	B	125 strips/pack
			10 packs/case

PACKAGING **B** Bulk

Please refer to the PCR plate compatibility chart on pages 30-31



PCR PLATE COMPATIBILITY CHART

Plate PN		3730.X	3438.X	3742.X	3732.X
Standard well (Overall height approx. 21 mm, max capacity > 350 µl)		●		●	
Low well (Overall height approx. 16 mm, max capacity > 200 µl)			●		●
Applied Biosystems					
Thermal Cyclers	2700	●		●	
	2720				
	6100				
	9600	●		●	
	9700	●		●	
	9800 "Fast"				
	Veriti 0.1mL				
	Veriti 0.2mL				
	Veriti 384				
"Real Time" Thermal Cyclers	5700	●		●	
	PRISM 7000	●		●	
	7300	●		●	
	7500	●		●	
	7500 "Fast"				
	7700	●		●	
	7900HT	●		●	
	7900HT 384 Well				
	StepOnePlus				
	ViiA 7				
	QuantStudio 12k Flex				
Sequencers	PRISM 310	●		●	
	PRISM 3100	●		●	
	3130 (XL)	●		●	
	3700	●		●	
	PRISM 3730 (XL)	●		●	
	3500 (XL)				
Amersham					
Sequencers	MegaBACE 500				●
	MegaBACE 1000				●
	MegaBACE 4000				
Beckman					
Sequencers	CEQ	●			
Biometra					
Thermal Cyclers	Uno	●	●	●	●
	Uno II	●	●	●	
	T1 Thermal Cycler	●	●	●	●
	Tgradient	●	●	●	●
	Trobot	●	●	●	●
Bio-Rad/MJ Research					
Thermal Cyclers	Gene Cyler	●		●	
	PTC-100	●	●		●
	PTC-200	●	●		●
	PTC-2250 Tetrad	●	●		●
	Dyad/Dyad Disciple	●	●		●
	iCycler	●			●
	Mycycler	●			
"Real Time" Thermal Cyclers	Opticon/Opticon2	●	●		●
	Chromo-4		●		●
	iCycler	●			●
	MyiQ	●			●
	iQ5	●			●
Sequencers	BaseStation				●
Corbett Research (Qiagen)					
Thermal Cyclers	Palm Cycler 96	●			●
	Palm Cycler 384				

Plate Part Number			3730.X	3438.X	3742.X	3732.X
Eppendorf						
Thermal Cyclers	Mastercycler		●	●		●
	Mastercycler ep		●	●	●	●
	Mastercycler Gradient		●		●	●
	Mastercycler M384					
"Real Time" Thermal Cyclers	Mastercycler ep Realplex			●		●
Ericom						
Thermal Cyclers	Power Block I		●	●	●	
	Deltacycler I		●	●		
	Deltacycler II		●	●	●	
	Single Block		●	●		
	Twin Block		●	●		
Esco						
Thermal Cyclers	Swift		●			
	Gene		●			●
	Genius		●			●
G-Storm						
Thermal Cyclers	GS1		●	●	●	
	GS2		●	●	●	
	GS4		●	●	●	
	GSX		●	●	●	
	GSXs		●	●	●	
MWQ						
Thermal Cyclers	Primus 96		●	●	●	●
	Primus 384					
Roche						
"Real Time" Thermal Cyclers	LightCycler 96					
	LightCycler 480					
Stratagene						
Thermal Cyclers	Robocycler 96		●			
	Robocycler Gradient		●	●	●	●
	SureCycler 8800			●		
"Real Time" Thermal Cyclers	Mx4000		●	●	●	
	Mx3005P		●	●	●	
TaKaRa						
Thermal Cyclers	TP240					●
	TP3000		●	●	●	●
Techno						
Thermal Cyclers	Touchgene		●	●	●	
	Cyclogene		●	●	●	
	Genius		●	●	●	
	Genius Quad		●	●	●	
	Genius (TC412)		●	●	●	●
	Flexigene		●	●	●	●
	Touchgene X		●	●		●
	Touchgene Gradient (TC512)		●	●	●	●
"Real Time" Thermal Cyclers	Quantica			●		●
Thermo Hybald						
Thermal Cyclers	PCR Sprint		●	●	●	●
	MBS Satellite System		●	●	●	●
	Px2		●	●	●	●
	PxE		●	●	●	●
	PCR Express		●	●	●	●
	Omni-E		●	●	●	●
	Touchdown		●	●	●	●
	OmniGene		●	●	●	●
Transgenomic						
Sequencers	WAVE System					●

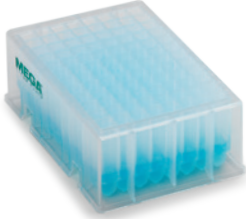

DEEP WELL PLATES



Megatiter™ Plate

Neptune's 2.2 ml plate offers the working volume of a culture tube and the convenience of a 96-well format. With a conical bottom, it provides easy sample retrieval.

Deep Well Plates

	Neptune PN	Packaging	Quantity
<div>Megatiter Plate</div> 	2405.X	B	24 plates/case
	2405.S.X	 1/bag	24 plates/case

PACKAGING  Pre-Sterile **B** Bulk

Autoclaving: Staying within the Parameters

Dry Goods Sterilization

All tips and tubes are classified as “dry goods” for sterilization procedures. This means they have thin cross-sections, limited mass, hard surfaces, and require MINIMUM AUTOCLAVE EXPOSURE. **Do not mix liquid-cycle or other types of materials with dry goods for sterilization.** During autoclaving the aerosols formed by evaporation of cell culture materials, agars, and other solutions will coat all exposed surfaces in the autoclave, including your tips and tubes.

When Autoclaving Neptune products, please stay within the parameters specified below:

Heat Exposure Recommendations for Autoclaving

Setting Temperature Time

121°C 10-15 minutes

Pressure at 15 PSI (approximately 1 atm.)

CAUTION: Over-Autoclaving Distortion

Pipette tips and tubes are precision manufactured to tolerances of less than 0.005 inches. Over-autoclaving produces unseen distortions caused by excess heat and/or exposure time. Tubes that “pop” during boiling and loose fitting bent tips are often the result. To limit distortion, all tubes should be open during autoclaving and tips should be racked in trays. Do not exceed the time and temperature recommendations shown in the table. Excessive heating can also produce color changes in tubes or tray hot-stamped logos. **Do not “overcook” your plastic products.**

RCF Ratings for Centrifuge Tubes

Two important specifications for centrifuges are Revolutions Per Minute (RPM) and Relative Centrifugal Force (RCF). Of the two specifications, Relative Centrifugal Force (RCF), or G force, is a standard unit of measure across all centrifuges and can be calculated using the formula below. Setting the RCF too high can cause a centrifuge tube to crack, and shatter. It is imperative that the end user confirms their RCF setting before beginning centrifugation.

RCF Value Equation

$$\text{RCF} = 0.00001118 \times \text{radius} \times \text{RPM}^2$$

RCF: Relative centrifugal force

Radius: rotor radius in centimeters

RPM: maximum RPM

Cryogenic Storage for Neptune Cryovials and Cryotubes

Liquid vs. Vapor Phase Storage

All cryogenic containers are designed for vapor phase storage. We advise against routine liquid phase storage because of the explosive potential of liquid N₂ when exposed to room temperatures.



BEST LABORATORY PRACTICES

Pipette Tips

For more than 22 years, Neptune has provided great value and proven quality. Our extensive line of universal fit pipette tips and barrier tips address the liquid handling needs of some of the busiest academic, clinical and research laboratories around the world. To ensure that Neptune pipette tips perform as well in your hands as they do in ours, we've outlined some best practices for using tips in the lab.

Compatibility

The single greatest contributing factor to liquid handling performance is fit. Pipette tips work with pipettors as a unified “system”, and the better the fit, the greater the overall accuracy and precision. Verify the compatibility of Neptune tips with your pipettor by referring to the Neptune Product Catalog or online at www.neptunescientific.com. If you do not find your specific pipettor in the compatibility chart, request a sample for confirmation of fit.

Mounting tips onto a pipettor should be done with firm downward pressure. You should not have to repeatedly pound the pipettor onto the tips. This can not only cause damage to your pipettor, but also increase your risk for repetitive stress disorder (RSD).

A good seal will ensure complete draw and dispense of your sample. However, you should also verify that the pipettor you are using has been calibrated. Verify that your pipettor is both accurate and precise. For pipettors that are used daily, it is recommended to have them calibrated every three months.



Precise, but not Accurate



Accurate, but not Precise



Precise and Accurate

Product Handling

When stored properly, Neptune pipette tips have a long shelf life and maintain high quality performance. Store tips at room temperature and practice a first in, first out (FIFO) program for managing inventory. When not in use, keep the lids closed on tip racks to prevent contamination from airborne particulates. Avoid touching pipette tips with your fingers, even when gloved.

Depending on the sample solution that you are working with, there are options to consider in tips and pipetting technique. For example, Neptune tips with S3 technology are ideal for viscous and/or precious samples where delivery of every drop counts. In the next section are general guidelines for pipetting with air displacement pipettes. Note that most all pipettor manufacturers will recommend a pre-rinsing of the pipette tip to improve accuracy, but this is seldom done in practice and is only noticed as an improvement in positive displacement pipettes.

Forward Pipetting Techniques

- Press the operating button to the first stop
- Dip the tip into the solution and then slowly release the operating button
- Dispense the solution by pressing the operating button down to the first stop. Then continue pressing down to the second stop, known as the “blow-out”. Avoid tilting the pipettor sideways in your hand
- Release the operating button and eject tip

Reverse Pipetting Techniques

The reverse technique is used for pipetting solutions that are highly viscous (i.e., whole blood or serum) or have a tendency to foam. An alternative is to use Neptune pipette tips with S3 technology.

- Press the operating button all the way down to the second stop
- Dip the tip into the solution and slowly release the operating button. This will fill the tip with a volume that is larger than the set volume
- Wait 1-2 seconds and withdraw the tip from the solution
- Dispense the solution by pressing the operation button gently and steadily to the first stop. This volume is equal to the set volume. Hold the button in this position. Some liquid will remain in the tip and should not be dispensed
- Release the operating button to the ready position and eject tip

Avoiding Contamination

Never directly touch or handle pipette tips, even when wearing gloves — tips should only make contact with a pipettor and solution. Change tips after pipetting of each sample and keep the pipettor vertical to prevent sample from running into the pipette shaft. Release the dispensing button slowly to prevent aerosol generation. Always use barrier filter tips when working with PCR, bacteria, viruses, or other sensitive substrates that can easily cross-contaminate via aerosols.

If autoclaving is required by your lab protocol, or if you are using bulk tips that are hand-racked in your lab, please adhere to the following guidelines:

- Make sure that tips are loaded into the tip rack. Autoclaving tips when they are not racked risks warping the tips. A tip which is no longer straight can result in upwards of 10% error in accuracy
- Use a piece of autoclave indicator tape to secure the lid of the tip rack
- Set autoclave for 121 °C, 15 PSI (1 atm) for 15 minutes
- Unlike glassware, do not use a “dry cycle” as this may distort and warp the tips
- Remove tips when autoclave has cooled and store as described in the Product Handling section above

Microcentrifuge Tubes

Microcentrifuge tubes (MCTs) are the workhorse of today's lab. Neptune's complete line of 0.6, 1.6, and 2.0 ml tubes were designed to meet the challenges of a wide array of lab procedures - from assays, to centrifugation, to sample storage.

Chemical Resistance

Neptune microcentrifuge tubes are made from medical grade polypropylene resin. This enables us to provide tubes without contaminating extractables, while maintaining high chemical resistance to a broad range of reagents and solvents. Before initiating use of these products for a new assay, please refer to the chemical resistance chart in the Neptune Product Catalog, or by going to www.neptunescientific.com.

Use in Centrifugation

MCTs from Neptune can withstand centrifugation up to 20,000 RCF. Before you use tubes for centrifugation, it is important to understand the difference between Revolutions Per Minute (RPM) and Relative Centrifugal Force (RCF). Of the two specifications, RCF, or G force, is a standard unit of measurement across all centrifuges and can be calculated using the formula provided here. Setting the RCF too high can cause a centrifuge tube to crack and shatter. Make sure that you are using the appropriate RCF speed, and not RPM.

Calculating RCF

$$RCF = 0.0001118 \times \text{radius of centrifuge rotor (cm)} \times \text{RPM}^2$$

Sample Storage in Freezer

Neptune MCT's can withstand freezing down to -80 °C and are often used for shorter term storage of samples. Water density expands by approximately 8 1/3% upon freezing, so be sure to have allowance for expansion when placing your samples in the tubes.

Avoiding Contamination

Always wear personal protective equipment (PPE) when handling laboratory consumables. When removing MCTs from the product bag, never reach into the bag with your hands. Instead, pour the tubes out from the bag. This avoids contamination and the ziplock seal of the bag preserves the remaining tubes for future use.

If autoclaving is required by your lab protocol, please adhere to the following guidelines:

- Pour MCTs into a sterile beaker
- Cover the beaker with aluminum foil and use a piece of autoclave indicator tape to secure the foil to the beaker
- Set autoclave for 121 °C, 15 PSI (1 atm) for 15 minutes
- Unlike glassware, do not use a "dry cycle" as this may distort the plastic of the tubes
- Keep tube sealed in beaker until use

PCR Tubes

Neptune offers a collection of high quality 0.2 to 0.6ml thin walled tubes specifically manufactured for PCR applications. The rigorous quality standards of this product line ensure peak performance in even the most sensitive of PCR assays.

Compatibility

The uniform thin-wall dimensions of Neptune PCR tubes make them compatible with thermocycler blocks on the market that accept industry standard tubes. Good block-tube contact is important for efficient thermocycling reactions, so it is always recommended to verify fit and contact of the tubes with your particular system. Also, be sure to check the heated lid of your system. Many thermocyclers come with heated lids with adjustable heights, so make sure that yours is set to optimize the seal and avoid the effects of condensation within the tube cap. Over adjustment may crush the tube.

Product Handling

Neptune PCR tubes are made of virgin polypropylene and have a long shelf life when properly stored. Maintaining room temperature storage, away from prolonged sun exposure, will help prevent the tubes from becoming brittle and yellow over time. Maintain a First In, First Out (FIFO) process for tube inventory.

When assembling your PCR, do so in a separated area. Always use aerosol barrier pipette tips and be sure to use a new tip every time you touch your stock solution and reagents to avoid cross-contamination.

Avoiding Contamination

Always wear PPE when handling products to set up a PCR reaction. When removing PCR tubes from the product bag, never reach into the bag with your hands. Instead, pour the tubes out from the bag. This avoids contamination and the ziplock seal of the bag preserves the remaining tubes for future use. Autoclaving thin-walled

PCR tubes is not recommended as it may impact the integrity of the seal. If sterility is a concern, purchase pre-sterile Neptune PCR tubes. If autoclaving is required by your lab protocol, please adhere to the following guidelines:

- Pour PCR tubes into a sterile beaker
- Cover the beaker with aluminum foil and use a piece of autoclave indicator tape to secure the foil to the beaker
- Set autoclave for 121 °C, 15 PSI (1 atm) for 15 minutes
- Unlike glassware, do not use a "dry cycle" as this may distort the plastic of the tubes
- Keep tube sealed in beaker until use

PCR Plates

Neptune offers an expansive line of 96-well PCR plates. Whether using the full profile, low profile, fully skirted, or semi-skirted plates, the rigorous quality standards of this product line ensure peak performance in even the most sensitive of PCR assays.

Compatibility

PCR plates from Neptune are molded from medical grade, high performance polypropylene and feature uniform thin-walls for superior heat transfer. The many options of plate styles (full profile, low profile, fully skirted and semi-skirted) means broader compatibility with the leading thermocyclers on the market. Good block-well contact is important for efficient thermocycling reactions, so be sure to refer to the PCR plate compatibility chart in the Neptune Product Catalog or on www.neptunescientific.com when considering your plate. Also, be sure to check the heated lid of your system. Many thermocyclers come with heated lids with adjustable heights, so make sure that yours is set to optimize the seal and avoid the effects of condensation within the plate.

Product Handling

Neptune PCR plates are made of virgin polypropylene and have a long shelf life when properly stored. Maintaining room temperature storage, away from prolonged sun exposure, will help prevent the tubes from becoming brittle and yellow over time. Maintain a First In, First Out (FIFO) process for plate inventory.

When assembling your PCR, do so in a separate "Pre-PCR" area and always wear PPE when handling products. Always use aerosol barrier pipette tips and be sure to use a new tip every time you touch your stock solution and reagents to avoid cross-contamination. Use the appropriate plate sealing tape for your application to reduce evaporation during cycling.

Avoiding Contamination

Neptune PCR plates are manufactured and tested to ensure the highest level of purity. Because they are certified as RNase, DNase, DNA, and endotoxin-free, it is not necessary to autoclave the plates before use. In fact, there have been several published reports where autoclaves have introduced contamination to products, particularly in busy labs that share the same autoclave. Additionally, autoclaving PCR plates may result in product warpage, which may impact fit and compatibility in your thermocycler. After cycling, always perform a quick spin of the plate to pull down condensation and prevent cross contamination when removing the sealing tape.



CHEMICAL AND PHYSICAL PROPERTIES OF PLASTICS

The information in this chart has been supplied to Biotix by various reputable raw material manufacturers, and is to be used only as a guide in selecting products for appropriate chemical compatibility. These values are based on laboratory tests with raw materials. Plastic components produced from these raw materials are frequently subject to influences that cannot be recognized in standard tests (temperature, pressure, material stress, etc.). In critical cases, it is essential that a test is carried out first to your unique protocol. Biotix does not warrant (neither express nor implied) that the information in this chart is accurate or complete or that any material is suitable for any purpose. No legal claims can be derived from this information, nor do we accept any liability for it.

General Physical Properties

Classes of substances; 20°C	HDPE	LDPE	PC	PP
Acids, weak or dilute	E	E	E	E
Acids, strong or concentrated	E	E	G	E
Alcohols, aliphatic	E	E	G	E
Aldehydes	G	G	F	G
Bases	E	E	N	E
Esters	G	G	N	G
Hydrocarbons, aliphatic	F	G	F	G
Hydrocarbons, aromatic	F	G	N	F
Hydrocarbons, halogenated	N	F	N	F
Keytones	G	G	N	G
Oxidizing agents, strong	F	F	N	F

Plastics Acronym Chart

Low Density Polyethylene	LDPE	1 - Satisfactory to 72°F (22°C)
High Density Polyethylene	HDPE	2 - Satisfactory to 120°F (48°C)
Polycarbonate	PC	3 - Satisfactory to 90°F (32°C)
Polypropylene	PP	4 - Satisfactory to 120°F (93°C)

Explanation of Footnotes

- A = No effect
- B = Minor Effect
- C = Moderate Effect
- D = Severe Effect; Not Recommended
- E = No damage after 30 days of constant exposure
- G = Little or no damage after 30 days of constant exposure
- F = Some effect after seven days of constant exposure; may see cracking, crazing, loss of strength
- N = Not recommended for continuous use
- = Not Available

Chemical Resistance Chart

Reagent	HDPE	LDPE	PC	PP
Acetaldehyde	C	C	C1	A1
Acetamide	A	A	D	A1
Acetate Solvent	A	A	-	B1
Acetic Acid	A	A2	B1	B1
Acetic Acid 20%	A	A	A1	A1
Acetic Acid 80%	A	D	B1	A
Acetic Acid, GlacialD	D	B1	A1	D
Acetic Anhydride	C	D	D	B1
Acetone, 50% water	-	-	-	A
Acetone	D	B1	D	A
Acetonitrile	A	A	D	A1
Acetophenone	C	D	D	C
Acetyl Chloride (dry)	-	D	D	D
Acetylene	-	D	D	A1
Acrylonitrile	A	A	D	A1
Adipic Acid	A	A	-	B2
Alanine	A	A	A	A
Alcohols				
- Amyl	A	B2	B1	B1
- Benzyl	B	D	-	A
- Butyl	-	A	A2	A
- Diacetone	A	B1	-	B2
- Ethyl	A	B	B2	A
- Isobutyl	A	A2	-	A1
- Isopropyl	a	A2	A2	A2

Reagent	HDPE	LDPE	PC	PP
- Methyl	A	A1	B1	A2
- Propyl	-	A2	-	A
Allyl Chloride	A	-	-	A
Aluminum Acetate (saturated)	-	-	-	A
Aluminum Chloride	A	B2	A1	A
Aluminum Chloride 20%	A	B2	A1	A
Aluminum Fluoride	A	A2	-	A
Aluminum Hydroxide	A	A2	B1	A
Aluminum Nitrate	-	A2	A1	A2
Aluminum Potassium Sulfate 10%	A	A2	A1	A
Aluminum Potassium Sulfate 100%	A	A2	A2	A
Aluminum Sulfate	A	A2	A	A
Alums	-	A	-	A
Amines	B	C1	-	B2
Ammonia 10%	A	C1	D	A2
Ammonia Nitrate	-	A	-	A
Ammonia anhydrous	A	B2	D	A
Ammonia liquid	A	C1	D	A2
Ammonia Acetate	A	A	-	A
Ammonia Bifluoride	-	A2	-	A
Ammonium Carbonate	B	B2	-	A
Ammonium Chloride	A	A2	A2	A
Ammonium Flouride 25%	A	-	-	A2
Ammonium Hydroxide	A	A1	D	A
Ammonium Glycolate	A	A	B	A

Reagent	HDPE	LDPE	PC	PP
Ammonium Nitrate	A	A1	-	A
Ammonium Oxalate	a	-	A1	A
Ammonium Persulfate	A	A2	-	A
Ammonium Phosphate, Dibasic	-	A2	A2	A
Ammonium Phosphate, Monobasic	-	A	-	A
Ammonium Phosphate, Tribasic	-	C	-	A
Ammonium Sulfate	A	A1	A2	A
Ammonium Sulfite	B	B2	-	A
Amyl Acetate	-	C1	D	B1
Amyl Alcohol	A	B2	B1	B1
Amyl Chloride	B	D	-	D
Aniline	B	C	D	A1
Aniline Hydrochloride	-	D	D	D
Antifreeze	-	-	-	D
Antimony Trichloride	B	B2	A2	A
Aqua Regia (80% HCL, 20% HNO3)	D	B1	D	B1
Arochlor 1248	-	C1	-	D
Aromatic Hydrocarbons	-	C	-	D
Arsenic Acid	B	B2	A1	A
Arsenic Salts	-	B	-	-
Barium Carbonate	-	B2	A2	A
Barium Chloride	B	A1	A	A
Barium Cyanide	-	B	-	D
Barium Hydroxide	-	B2	D	B
Barium Nitrate	-	B2	D	A
Barium Sulfate	B	B2	D	B1
Barium Sulfide	A	B2	-	B
Benzaldehyde	B	A1	D	D
Benzenamine	B	A	D	A
Benzene	D	D	D	D
Benzene Sulfonic Acid	A	A1	D	D
Benzoic Acid	A	A1	B1	B1
Benzol	-	C1	D	B
Benzyl Chloride	-	-	-	C1
Bleach	-	-	-	D
Bleaching liquors	-	A1	-	A1
Borax (Sodium Borate)	A	A2	-	B
Boric Acid	A	A2	-	A
Bromine	D	D	C1	D
Bromofone	D	D	D	D
Butadiene	D	D	D	C
Butane	-	C1	D	A1
Butanol (Butyl Alcohol)	-	B2	B1	A1
Butyl Amine	-	C1	D	B1
Butyl Ether	-	-	-	D
Butyl Phthalate	A	C1	D	B2

Reagent	HDPE	LDPE	PC	PP
Butyl Acetate	B	C1	D	B1
Butyric Acid	D	D	D	B1
Calcium Bisulfide	-	B1	-	A
Calcium Bisulfite	A	A1	D	A
Calcium Carbonate	-	B	C2	A
Calcium Chloride (30% in water)	A	B2	-	A2
Calcium Chloride (saturated)	A	-	-	A
Calcium Hydroxide 10%	A	-	-	A
Calcium Hydroxide (saturated)	A	-	-	A
Calcium Hydroxide	A	A2	D	A2
Calcium Hypochlorite 30%	A	-	-	A
Calcium Hypochlorite (saturated)	A	-	-	A
Calcium Nitrate	B	A1	A2	A2
Calcium Oxide	-	B1	-	A
Calcium Sulfate	-	B1	A2	A
Calcium Sulfide	-	-	-	A
Carbolic Acid (Phenol)	-	D	D	B
Carbon Bisulfide	-	-	-	D
Carbon Dioxide (dry)	-	A1	-	A2
Carbon Dioxide (wet)	-	A1	-	A2
Carbon Disulfide	D	D	D	D
Carbon Monoxide	-	A2	-	A
Carbon Tetrachloride	C	D	D	D
Carbon Tetrachloride (dry)	C	D	-	D
Carbon Tetrachloride (wet)	C	-	-	D
Carbonic Acid	B	B2	A1	A
Cellulose Acetate	-	-	-	A
Chloral Hydrate	D	-	-	D
Chlorine Water	C	B1	-	D
Chlorine Anhydrous Liquid	C	D	C	D
Chlorine (dry)	B	D	-	D
Chloroacetic Acid	A	D	D	C1
Chlorobenzene (Mono)	D	C1	D	C1
Chlorobromomethane	-	A	-	A
Chloroform	D	C1	D	C1
Chlorosulfonic Acid	D	D	C1	D
Chromic Acid 5%	A	A	B	D
Chromic Acid 10%	A	A	B	D
Chromic Acid 30%	A	A	C	D
Chromic Acid 50%	A	A	D	D
Citric Acid	A	D	A1	A
Citric Oils	B	-	-	A
Copper Chloride	-	-	-	A
Copper Cyanide	-	B2	D	A
Copper Nitrate	-	B2	D	A
Copper Sulfate 5%	A	A2	A1	A

CHEMICAL AND PHYSICAL PROPERTIES OF PLASTICS *CONTINUED*

Reagent	HDPE	LDPE	PC	PP
Copper Sulfate >55	A	A2	A1	A
Cresols	D	C1	D	D
Cresylic Acid	-	B1	D	A1
Cupric Acid	-	B1	A1	A2
Cyclohexane	D	B1	B	D
Cyclohexanon	B	D	D	D
Detergents	A	D	A1	A
Dextrin	A	-	-	A
Dextrose	A	-	-	A
Diacetone Alcohol	A	A	D	A1
Dichlorobenzane	-	-	D	C1
Dichloroethane	C	C1	D	D
Diesel Fuel	D	C1	A2	A1
Diethyl Ether	D	-	D	A1
Diethylamine	D	D	D	A1
Diethylene Glycol	A	B2	B1	A2
Dimethyl Aniline	B	-	D	D
Dimethyl Formamide	A	A	D	A
Diphenyl	-	-	-	D
Diphenyl Oxide	-	-	-	D
Disodium Phosphate	A	-	-	A
Epson Salts (Magnesium Sulfate)	-	A2	A1	A
Ethane	-	-	-	D
Ethanol	A	B	B2	A
Ethanolamine	-	-	-	D
Ether	D	D	-	D
Ethyl Acetate	A	A	D	A1
Ethyl Benzoate	B	C2	D	B1
Ethyl Chloride	C	C1	D	D
Ethyl Ether	D	D	-	D
Ethylene Bromide	-	D	D	D
Ethylene Chloride	C	D	D	C1
Ethylene Chlorohydrin	-	D	D	D
Ethylene Dichloride	D	D	D	D
Ethylene Glycol	A	A2	B1	A
Ethylene Oxide	B	A	C1	D
Fatty Acids	A	D	B1	A
Ferric Chloride	D	A1	A2	A
Ferric Nitrate	-	A2	A1	A
Ferric Sulfate	-	A2	A1	A
Ferrous Chloride	A	A2	D	A
Ferrous Sulfate	-	A2	A1	A
Fluboric Acid	A	A2	-	A
Flourine	D	D	C	D
Fluosilicic Acid	B	A2	A1	A
Formaldehyde 40%	A	D	A1	A
Formaldehyde 100%	A	B	A2	C

Reagent	HDPE	LDPE	PC	PP
Formic Acid	A	D	A1	A1
Freon 11	A	C	-	A
Freon 12	-	A1	-	A2
Freon 22	-	-	-	B
Freon 113	-	-	B1	D
Freon TF	B	-	-	D
Fuel Oils	C	B	B1	A
Furan Resin	-	D	-	D
Furfural	A	D	D	D
Gallic Acid	A	A	-	A
Gasoline (high-aromatic)	B	A	A	A
Gasoline , leaded, ref.	B	-	A2	B
Gasoline, unleaded	B	-	A2	C1
Gelatin	A	A2	-	A
Glucose	A	A2	A1	A
Glycerin	A	A1	A2	A
Glycolic Acid	-	A2	-	A
Heptane	B	B1	B	C2
Hexane	C	D	D	B1
Hydraulic Oil (Petro)	A	C	-	D
Hydraulic Oil (Synthetic)	A	A	-	D
Hydrazine	D	-	D	C
Hydrobromic Acid 20%	D	B2	-	A2
Hydrobromic Acid 100%	D	B1	-	C1
Hydrochloric Acid 20%	A	A2	B1	B2
Hydrochloric Acid 37%	A	B2	D	C
Hydrochloric Acid 100%	D	-	D	B1
Hydrochloric Acid, Dry Gas	D	A2	-	B
Hydrocyanic Acid	A	A2	-	A
Hydrocyanic Acid (Gas 10%)	A	-	B1	A
Hydrofluoric Acid 20%	A	A2	D	A2
Hydrofluoric Acid 50%	A	A1	D	A2
Hydrofluoric Acid 75%	B	C1	D	C1
Hydrofluoric Acid 100%	D	-	D	C1
Hydrofluosilicic Acid 20%	B	B2	-	A
Hydrofluosilicic Acid 100%	C	B1	-	A
Hydrogen Gas	A	A2	A2	A
Hydrogen Peroxide 10%	A	A	A2	A
Hydrogen Peroxide 30%	A	C2	A2	B1
Hydrogen Peroxide 50%	A	C2	A2	B1
Hydrogen Peroxide 100%	A	C2	A	B1
Hydrogen Sulfide (aqua)	A	A	A	A1
Hydrogen Sulfide (dry)	A	A	-	A1
Hydroquinone	-	A	-	A
Iodine	B	A1	-	C
Isooctane	B	B	B1	A2
Isopropyl Acetate	B	B1	D	B1

Reagent	HDPE	LDPE	PC	PP
Isopropyl Ether	D	B	D	B
Isotane	-	-	-	D
Kerosene	B	C1	D	B
Ketones	D	C1	D	C
Laquer Thinners	D	A	B	D
Laquers	D	A	D	D
Lactic Acid	A	A1	B	B
Latex	-	-	-	A2
Lead Acetate	A	A2	-	A1
Lead Nitrate	A	A2	-	A2
Lead Sulfamate	-	A1	A1	A2
Linoleic Acid	-	A	-	B1
Lithium Chloride	D	A2	B1	A2
Lye: KOH Potassium Hydroxide	B	A	D	A
Lye: NaOH Sodium Hydroxide	B	D	D	A
Lye: Ca(OH)2 Calcium Hydroxide	B	A2	D	A2
Magnesium Bisulfate	-	-	A1	A2
Magnesium Carbonate	-	B	A1	A
Magnesium Chloride	A	A1	A2	A2
Magnesium Hydroxide	B	A2	A1	A
Magnesium Nitrate	B	A2	A1	A
Magnesium Sulfate (Epson Salts)	A	A2	A1	A
Maleic Acid	A	B2	-	A
Maleic Anhydride	A	D	-	D
Malic Acid	-	B2	-	A1
Melamine	-	-	-	A
Mercuric Chloride (dilute)	A	A	A	B
Mercuric Cyanide	-	A	-	B
Mercurous Nitrate	-	A	A2	A
Mercury	A	A	D	B
Methane	-	-	-	A
Methanol (Methyl Alcohol)	A	A1	B1	A2
Methyl Acetate	C	B1	D	D
Methyl Acrylate	-	-	-	D
Methyl Alcohol 10%	A	A1	B1	A2
Methyl Bromide	-	C1	-	C
Methyl Butyl Ketone	-	-	D	D
Methyl Cellusolve	-	-	D	B
Methyl Chloride	-	C1	D	D
Methyl Dichloride	-	-	-	D
Methyl Ethyl Ketone	D	D	D	B2
Methyl Isobutyl Ketone	D	C	D	A
Methyl Methacrylate	-	-	-	D
Methylamine	-	A1	-	A2
Methylene Chloride	D	D	D	B1
Mineral Spirits	D	B	C	B

Reagent	HDPE	LDPE	PC	PP
Monoethanolamine	-	C	-	B
Morpholine	-	-	D	B2
Naphtha	-	A1	B	B
Naphthalene	B	C	-	B
Natural Gas	-	A	-	A
Nickel Chloride	B	A	A2	A
Nickel Nitrate	B	A	D	A2
Nickel Sulfate	B	A	A	A
Nitrating Acid (<1%)	-	-	-	C
Nitrating Acid (<15% H2SO4)	-	-	-	C
Nitrating Acid (>15% H2SO4)	-	-	-	C
Nitrating Acid (<15% HNO3)	-	-	-	C
Nitric Acid (5-10%)	A	B	A	A
Nitric Acid (20%)	B	C	B1	A2
Nitric Acid (50%)	D	B1	B	B
Nitric Acid (Concentrated)	D	C1	C1	D
Nitrobenzene	D	C1	D	B1
Nitromethane	D	A	D	B2
Nitrous Acid	-	-	-	A
Nitrous Oxide	-	C	-	D
Oleic Acid	C	C2	-	B1
Oleum 25%	-	D	-	D
Oleum 100%	-	D	-	D
Oxalic Acid (cold)	A	A2	-	A2
Ozone	A	C1	A1	B
Palmitic Acid	-	-	-	B1
Parafin	B	B	A1	A1
Pentane	-	D	A	D
Perchloric Acid	D	B	-	C
Perchloroethylene Acid	D	D	D	D
Petrolatum	-	B	-	D
Petroleum	D	C1	-	B1
Phenol (10%)	D	B	B1	B1
Phenol (Carbolic Acid)	D	D	D	B
Phosphoric Acid (<40%)	A	A	A	A2
Phosphoric Acid (>40%)	A	B1	A	A2
Phosphoric Acid (crude)	B	B1	A	B2
Phosphoric Acid (molten)	D	-	-	D
Phosphoric Acid Anhydride	A	-	D	A
Phosphorus	-	B	-	A
Photographic Developer	-	A	A2	A
Photographic Solutions	A	A	A1	A2
Phthalic Acid	B	B2	-	A
Phthalic Anhydride	-	-	A1	D
Picric Acid	D	A	D	B1
Potash (Potassium Carbonate)	B	A1	-	A

CHEMICAL AND PHYSICAL PROPERTIES OF PLASTICS *CONTINUED*

Reagent	HDPE	LDPE	PC	PP
Potassium Bicarbonate	B	A	-	A
Potassium Bromide	B	A	A1	A
Potassium Chlorate	B	A1	A1	A
Potassium Chloride	A	A1	A	A
Potassium Chromate	-	A	-	A
Potassium Cyanide Solutions	-	A	-	A
Potassium Dichromate	B	A	A1	A
Potassium Ferricyanide	-	A2	-	A2
Potassium Ferrocyanide	-	A1	-	A
Potassium Hydroxide (Caustic Potato)	A	A	D	A
Potassium Iodite	B	B1	-	A2
Potassium Nitrate	B	A	A1	A
Potassium Permanganate	A	A	A2	A1
Potassium Sulfate	B	A2	A1	A
Potassium Sulfide	-	A2	-	A
Propane (liquefied)	D	C1	C1	A
Propylene Glycol	A	B2	B1	A2
Pyridine	D	B1	D	A2
Pyrogalllic Acid	-	-	-	A
Salicylic Acid	-	B2	A1	A1
Silicone	-	-	A2	A
Silver Nitrate	A	A	A2	A1
Soap Solutions	B	D	A1	A
Soda Ash (see Sodium Carbonate)	A	B	A	A
Sodium Acetate	A	A	A1	A
Sodium Aluminate	-	-	-	-
Sodium Benzoate	B	A2	A2	A2
Sodium Bicarbonate	A	A2	A2	A
Sodium Bisulfate	B	A2	A1	A
Sodium Borate (Borax)	B	A2	A1	A2
Sodium Carbonate	A	B2	A2	A
Sodium Chlorate	-	B2	A1	A
Sodium Chloride	A	A2	A2	A
Sodium Cyanide	B	A2	-	A
Sodium Ferrocyanide	-	A	-	A
Sodium Fluoride	-	A2	-	A
Sodium Hydroxide (20%)	C	B	A2	A
Sodium Hydroxide (50%)	C	B	D	A
Sodium Hydroxide (80%)	C	-	D	A
Sodium Hypochlorite (100%)	C	B2	-	B
Sodium Hypochlorite (<20%)	A	A	C	A
Sodium Metaphosphate	B	A1	-	A1
Sodium Metasilicate	-	-	-	A
Sodium Nitrate	B	A2	-	A
Sodium Perborate	-	A1	-	A
Sodium Peroxyde	B	A	A2	B

Reagent	HDPE	LDPE	PC	PP
Sodium Polyphosphate	B	A	-	A
Sodium Silicate	A	A2	-	A
Sodium Sulfate	-	A2	A2	A
Sodium Sulfide	B	A2	D	A
Sodium Sulfite	B	B1	-	A2
Sodium Thiosulfate	-	A1	D	A2
Stannic Chloride	-	A2	A1	A
Stannous Chloride	-	B2	-	A
Stearic Acid	A	B1	A1	A2
Stoddard Solvent	-	C2	A2	C
Sulfate (Liquors)	A	A2	-	A
Sulfur Chloride	-	C1	-	C1
Sulfur Dioxide	D	B1	-	A1
Sulfur Dioxide (dry)	A	A1	A1	A1
Sulfur Hexafluoride	-	B	-	-
Sulfur Trioxide	-	-	-	C
Sulfur Trioxide (dry)	-	C1	-	D
Sulfuric Acid (<10%)	A	A1	A1	A2
Sulfuric Acid (10 - 75%)	A	A1	B1	A1
Sulfuric Acid (75 - 100%)	B	C	D	C1
Sulfuric Acid (cold concentrated)	B	D	-	A2
Sulfuric Acid (hot concentrated)	B	D	D	D
Sulfurous Acid	B	B2	-	A
Tannic Acid	A	B2	C	A
Tartaric Acid	A	A1	-	A
Tetrachloroethane	-	-	-	C
Tetrachloroethylene	C	B	D	D
Tetrahydrofuran	C	C1	D	C2
Tin Salts	-	-	-	A
Toluene	D	C1	D	C1
Trichloroacetic Acid	C	A	D	A
Trichlorethane	D	-	D	C
Trichloroethylene	D	D	-	C1
Tricresylphosphate	-	B1	-	A1
Triethylamine	-	-	-	D
Trisodium Phosphate	A	A	-	A
Turpentine	B	D	D	D
Urea	A	A	D	A
Urine	A	A2	-	A
Vinegar	A	A	A2	A
Vinyl Acetate	D	A	-	B1
Water, Deionized	A	-	-	A2
Water, Distilled	A	A2	A2	A
Water, Salt	A	A2	A2	A
Xylene	D	B	D	B
Zinc Chloride	A	A1	A2	A
Zinc Sulfate	A	A2	A2	A

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