

## DETERGENTS & BUFFERS

### IONIC DETERGENTS

Detergent	Cat. No.	M.W. <sup>a</sup> (anhydrous)	CMC <sup>b</sup> (mM)	Aggregation No.	Average Micellar Weight	Size
BATC	196950	655.8	—	—	—	500 mg
Cetyltrimethylammonium Bromide (CTAB) Molecular Biology Grade	219374	364.5	1.0	170	62,000	100 g
Chenodeoxycholic Acid, Free Acid	2204	392.6	—	—	—	5 g
Chenodeoxycholic Acid, Sodium Salt	220411	414.6	—	—	—	1 g 5 g
Cholic Acid, Sodium Salt	229101	430.6	9 - 15	2.0	900	50 g 250 g 1 kg
Cholic Acid, Sodium Salt, ULTROL® Grade	229102	430.6	9 - 15	2.0	900	1 g 5 g
Deoxycholic Acid, Sodium Salt	264101	414.6	4 - 8	4-10	1600-4100	25 g 100 g
Deoxycholic Acid, Sodium Salt, ULTROL® Grade	264103	414.6	2 - 6	3-12	1200-4900	5 g 25 g 100 g
7 $\alpha$ , 12 $\alpha$ -Dihydroxy-5 $\beta$ -cholanolic Acid	305705	392.6	—	—	—	100 mg
Glycholic Acid, Sodium Salt	360512	487.6	7.1	2.1	1000	1 g 5 g
Glycodeoxycholic Acid, Sodium Salt	361311	471.6	2.1	2.1	900	5 g
Lauroylsarcosine, Sodium Salt	428010	293.4	—	2.0	600	5 g
Sodium <i>n</i> -Dodecyl Sulfate (SDS)	428015	288.5	7 - 10	62	18,000	1 kg
Sodium <i>n</i> -Dodecyl Sulfate (SDS), High Purity	428016	288.5	7 - 10	62	18,000	25 g
Sodium <i>n</i> -Dodecyl Sulfate (SDS), Molecular Biology Grade	428023	288.5	7 - 10	62	18,000	50 g 500 g
Sodium <i>n</i> -Dodecyl Sulfate (SDS), 30% Solution	428018	288.5	7 - 10	62	18,000	200 ml
Taurochenodeoxycholic Acid, Sodium Salt	580211	521.7	—	—	—	1 g 5 g
Taurocholic Acid, Sodium Salt	580217	537.7	3 - 11	4	2100	5 g 25 g
Taurocholic Acid, Sodium Salt, ULTROL® Grade	580218	537.7	3 - 11	4	2100	1 g 5 g
Taurodehydrocholic Acid, Sodium Salt	580219	531.6	—	—	—	1 g
Taurodeoxycholic Acid, Sodium Salt	580221	521.7	1 - 4	6	3100	5 g 50 g
Taurolithocholic Acid, Sodium Salt	580352	505.7	—	—	—	1 g 5 g
Tauroursodeoxycholic Acid, Sodium Salt	580549	521.7	—	—	—	1 g 5 g
TOPPS	615000	350.5	4.5	—	—	5 g

## NON-IONIC DETERGENTS

Detergent	Cat. No.	M.W. <sup>a</sup> (anhydrous)	CMC <sup>b</sup> (mM)	Aggregation No.	Average Micellar Weight	Size
APO-10	178375	218.3	4.6	131	28,000	1 g
APO-12	178377	246.4	0.568	2232	500,000	1 g
Big CHAP	200965	878.1	3.4	10	8,800	1 g
Big CHAP, Deoxy	256455	862.1	1.1 - 1.4	8-16	10,500	250 mg 1 g
BRIJ® 35, PROTEIN GRADE® Detergent, 30% Solution	203724	—	0.09	40	48,000	100 ml 1 L
BRIJ® 35, PROTEIN GRADE® Detergent, 10% Solution, Sterile-Filtered	203728	—	0.09	40	48,000	50 ml
C <sub>12</sub> E <sub>5</sub>	205524	—	—	—	—	1 g
C <sub>12</sub> E <sub>6</sub>	205527	450.7	0.087	—	—	1 g
C <sub>12</sub> E <sub>8</sub>	205528	538.8	0.11	123	66,000	1 g
C <sub>12</sub> E <sub>9</sub>	205529	582.8	0.08	—	—	1 g
Cyclohexyl- <i>n</i> -ethyl-β-D-maltoside, ULTROL® Grade	239774	452.5	120	—	—	1 g
Cyclohexyl- <i>n</i> -hexyl-β-D-maltoside, ULTROL® Grade	239775	508.6	0.56	63	32,000	500 mg 1 g
Cyclohexyl- <i>n</i> -methyl-β-D-maltoside, ULTROL® Grade	239776	438.5	340	—	—	1 g
<i>n</i> -Decanoylsucrose	252721	496.6	2.5	—	—	1 g 5 g
<i>n</i> -Decyl-β-D-maltopyranoside, ULTROL® Grade	252718	482.6	1.6	—	—	1 g 5 g
<i>n</i> -Decyl-β-D-thiomaltoside, ULTROL® Grade	252725	498.6	0.9	—	—	500 mg
Digitonin, High Purity	300410	1229.3	—	5 - 6	7000	250 mg 1 g 5 g
Digitonin, Alcohol-Soluble, High Purity	300411	1229.3	—	5 - 6	7000	250 mg 1 g
<i>n</i> -Dodecanoylsucrose	324374	524.6	0.3	—	—	1 g 5 g
<i>n</i> -Dodecyl-β-D-glucopyranoside	324351	348.5	0.13	200	70,000	1 g
<i>n</i> -Dodecyl-β-D-maltoside, ULTROL® Grade	324355	510.6	0.1-0.6	98	50,000	500 mg 1 g 5 g 25 g
ELUGENT™ Detergent, 50% Solution	324707	—	—	—	—	100 ml
GENAPOL® C-100, PROTEIN GRADE® Detergent, 10% Solution	345794	627.0	—	—	—	50 ml
GENAPOL® X-80, PROTEIN GRADE® Detergent, 10% Solution	345796	553.0	0.06 - 0.15	—	—	50 ml
GENAPOL® X-100, PROTEIN GRADE® Detergent, 10% Solution	345798	641.0	0.15	88	56,000	50 ml
<i>n</i> -Heptyl-β-D-glucopyranoside	375655	278.3	79	—	—	1 g
<i>n</i> -Heptyl-β-D-thioglucopyranoside, ULTROL® Grade, 10% Solution	375659	294.4	30	—	—	10 ml 50 ml
<i>n</i> -Hexyl-β-D-glucopyranoside	376965	264.3	250	—	—	1 g
MEGA-8, ULTROL® Grade	444926	321.5	58	—	—	1 g 5 g
MEGA-9, ULTROL® Grade	444930	335.5	19 - 25	—	—	1 g 5 g
MEGA-10, ULTROL® Grade	444934	349.5	6 - 7	—	—	1 g 5 g

## NON-IONIC DETERGENTS (continued)

Detergent	Cat. No.	M.W. <sup>a</sup> (anhydrous)	CMC <sup>b</sup> (mM)	Aggregation No.	Average Micellar Weight	Size
<i>n</i> -Nonyl-β-D-glucopyranoside	488285	306.4	6.5	—	—	1 g
NP-40	492015	603.0	0.05-0.3	—	—	100 ml 500 ml 1000 ml
NP-40, PROTEIN GRADE® Detergent, 10% Solution	492017	603.0	0.05-0.3	—	—	50 ml
<i>n</i> -Octanoyl-β-D-glucosylamine (NOGA)	488100	305.4	80	—	—	500 mg 1 g 5 g
<i>n</i> -Octanoylsucrose	494466	468.5	24.4	—	—	1 g 5 g
<i>n</i> -Octyl-β-D-glucopyranoside	494459	292.4	20 - 25	84	25,000	1 g 5 g 25 g
<i>n</i> -Octyl-β-D-glucopyranoside, ULTROL® Grade	494460	292.4	20 - 25	84	25,000	250 mg 1 g 5 g
<i>n</i> -Octyl-β-D-maltopyranoside	494465	454.5	23.4	84	38,000	1 g
<i>n</i> -Octyl-β-D-thioglycopyranoside, ULTROL® Grade	494461	308.4	9	—	—	5 g 25 g
PLURONIC® F-127, PROTEIN GRADE® Detergent, 10% Solution	540025	—	4 - 11	—	—	50 ml
TRITON® X-100	648462	625 (avg.)	0.2 - 0.9	100 - 155	80,000	1 kg
TRITON® X-100, PROTEIN GRADE® Detergent, 10% Solution	648463	625 (avg.)	0.2 - 0.9	100 - 155	80,000	50 ml
TRITON® X-100, Molecular Biology Grade	648466	625 (avg.)	0.2 - 0.9	100 - 155	80,000	50 ml
TRITON® X-100, Hydrogenated	648465	631 (avg.)	0.25	100 - 155	80,000	10 g
TRITON® X-100, Hydrogenated, PROTEIN GRADE® Detergent, 10% Solution	648464	631 (avg.)	0.25	100 - 155	80,000	10 ml
TRITON® X-114, PROTEIN GRADE® Detergent, 10% Solution	648468	537 (avg.)	0.35	—	—	50 ml
TWEEN® 20	655205	1228 (avg.)	0.059	—	—	250 ml
TWEEN® 20, Molecular Biology Grade	655204	—	0.059	—	—	100 ml
TWEEN® 20, PROTEIN GRADE® Detergent, 10% Solution	655206	1228 (avg.)	0.059	—	—	50 ml
TWEEN® 80, PROTEIN GRADE® Detergent, 10% Solution	655207	1310 (avg.)	0.012	58	76,000	50 ml
<i>n</i> -Undecyl-β-D-maltoside, ULTROL® Grade	662085	496.6	0.59	—	—	500 mg 1 g

## DETERGENT KITS

Product	Cat. No.	Kit Contents
APO Detergent Set	178400	1 g each of the following non-ionic detergents: APO-8, APO-9, APO-10, APO-11, and APO-12.
Detergent Test Kit	263451	1 g each of: <i>n</i> -Hexyl-β-D-glucopyranoside, <i>n</i> -Heptyl-β-D-glucopyranoside, <i>n</i> -Nonyl-β-D-glucopyranoside; <i>n</i> -Octyl-β-D-glucopyranoside, <i>n</i> -Decyl-β-D-glucopyranoside, and <i>n</i> -Dodecyl-β-D-maltoside.
Detergent Variety Pack	263458	1 g each of: CHAPS, Deoxycholic Acid, <i>n</i> -Octyl-β-D-glucopyranoside, <i>n</i> -Octyl-β-D-thioglycopyranoside, and ZWITTERGENT® 3-14.
MEGA Test Kit	444936	1 g each of: MEGA-8, ULTROL® Grade, MEGA-9, ULTROL® Grade, and MEGA-10, ULTROL® Grade.
NDSB Set	480012	5 g of NDSB-195, 25 g of NDSB-201, and 5 g of NDSB-256.
ZWITTERGENT® Test Kit	693030	1 g each of: ZWITTERGENT® 3-08 Detergent, ZWITTERGENT® 3-10 Detergent, ZWITTERGENT® 3-12 Detergent, ZWITTERGENT® 3-14 Detergent, and ZWITTERGENT® 3-16 Detergent.

a: Average molecular weights are given for detergents composed of mixtures of chain lengths.

b: Temperature = 20 - 25°C.

## ZWITTERIONIC DETERGENTS

Detergent	Cat. No.	M.W. <sup>a</sup> (anhydrous)	CMC <sup>b</sup> (mM)	Aggregation No.	Average Micellar Weight	Size
ASB-14	182750	434.7	—	—	—	5g, 25 g
ASB-16	182755	462.7	—	—	—	5g, 25 g
CHAPS	220201	614.9	6-10	4-14	6000	1 g 5 g 10 g 25 g
CHAPSO	220202	630.9	8	11	7000	1 g 5 g
DDMAB	252000	299.5	4.3	—	—	5 g
DDMAU	252005	397.7	0.13	—	—	5 g
EMPIGEN BB <sup>®</sup> Detergent, 30% Solution	324690	272.0	1.6-2.1	—	—	100 ml
Lauryldimethylamine Oxide (LDAO), 30% Solution	428011	229.4	1-2	76	17,000	100 ml
ZWITTERGENT <sup>®</sup> 3-08 Detergent	693019	279.6	330	—	—	5 g
ZWITTERGENT <sup>®</sup> 3-10 Detergent	693021	307.6	25-40	41	12,500	5 g 25 g
ZWITTERGENT <sup>®</sup> 3-12 Detergent	693015	335.6	2-4	55	18,500	5 g 25 g
ZWITTERGENT <sup>®</sup> 3-14 Detergent	693017	363.6	0.1-0.4	83	30,000	5 g 25 g 100 g
ZWITTERGENT <sup>®</sup> 3-16 Detergent	693023	391.6	0.01-0.06	155	60,000	5 g 25 g

## NON-DETERGENT SULFOBETAINES

Product	Cat. No.	Description	Size
NDSB-195	480001	Zwitterionic over a wide pH range. Does not absorb significantly in the near-UV range. Easily removed by dialysis.	5 g
NDSB-201	480005	Preserves the antigenic conformation of serine protease gp76. Does not interfere with colorimetric assay using <i>p</i> -nitrophenylphosphate and <i>o</i> -nitrophenyl- $\beta$ -D-galactopyranoside as substrates.	25 g 250 g
NDSB-211	480013	Improves ion-chromatographic separation of halophilic elongation factor Tu and halophilic malate dehydrogenase at reduced ionic strengths. Exhibits low UV absorption.	1g 5 g
NDSB-221	480014	At 1.8 M, NDSB-221 yields about 35% native hen egg white lysozyme (HEWL), which is about 10-fold higher than in the absence of NDSB-221. At ~1.5 M, NDSB-221 efficiently increases the renaturation of $\beta$ -D-galactosidase.	5 g 25 g
NDSB-256	480010	Restores about 30% of the enzymatic activity of denatured lysozyme at 1 M concentration.	5 g
NDSB Set	480012	Includes 5 g of NDSB-195 (Cat. No. 480001), 25 g of NDSB-201 (Cat. No. 480005), and 5 g of NDSB-256 (Cat. No. 400010).	1 set

## BUFFERS

Product	Cat. No.	M.W.	pK <sub>a</sub> at 20° C	Size
ACES	104801	182.2	6.90	100 g 1 kg
ADA, Sodium Salt	114801	212.2	6.60	100 g
2-Amino-2-methyl-1,3-propanediol	164548	105.1	8.83	50 g 500 g
Ammonium Acetate, Molecular Biology Grade	168305	77.1	—	250 g
BES, Free Acid, ULTROL <sup>®</sup> Grade	391334	213.3	7.15	25 g 100 g
Bicine, ULTROL <sup>®</sup> Grade	391336	163.2	8.35	100 g 1 kg
BIS-Tris, ULTROL <sup>®</sup> Grade	391335	209.2	6.50	100 g 1 kg

## BUFFERS (continued)

Product	Cat. No.	M.W.	pK <sub>a</sub> at 20° C	Size
BIS-Tris Propane, ULTROL® Grade	394111	282.4	6.80	100 g 1 kg
Boric Acid, Molecular Biology Grade	203667	61.8	9.24	500 g 1 kg, 5 kg
Cacodylic Acid, Sodium Salt	205541	160.0	6.27	100 g
CAPS, ULTROL® Grade	239782	221.3	10.40	100 g 1 kg
CHES, ULTROL® Grade	239779	207.3	9.50	100 g
Citric Acid, Monohydrate, Molecular Biology Grade	231211	210.1	3.13, 4.76, 6.40	100 g 1 kg
Ethyl Glycinate, Hydrochloride	341111	139.6	—	100 g 500 g
Glycine, Free Base	3570	75.1	2.34 9.60	500 g 1 kg
Glycine, Molecular Biology Grade	357002	75.1	2.34 9.60	100 g 1 kg
Glycylglycine, Free Base	3630	132.1	8.40	25 g 100 g
HEPES, Free Acid, Molecular Biology Grade	391340	238.3	8.40	25 g 250 g
HEPES, Free Acid, ULTROL® Grade	391338	238.3	7.55	25 g 100 g, 500 g 1 kg, 5 kg
HEPES, Free Acid, ULTROL® Grade, 1 M Solution	375368	238.3	7.55	100 ml 500 ml
HEPES, Sodium Salt, ULTROL® Grade	391333	260.3	7.55	100 g, 500 g 1 kg
HEPPS, ULTROL® Grade	391339	252.3	8.00	100 g
Imidazole, ULTROL® Grade	4015	68.1	7.00	25 g 100 g
Lithium Citrate, Tetrahydrate	438005	282.0	—	100g, 1 kg
MES, Free Acid, ULTROL® Grade	475893	195.2	6.15	100 g 500 g 1 kg
MES, Sodium Salt, ULTROL® Grade	475894	217.2	6.15	100 g 1 kg
MOPS, Free Acid, Molecular Biology Grade	475922	209.3	7.20	100 g
MOPS, Free Acid, ULTROL® Grade	475898	209.3	7.20	100 g, 500 g 1 kg
MOPS, Sodium Salt, ULTROL® Grade	475899	231.2	7.20	100 g 1 kg
MOPS/EDTA Buffer, 10X Liquid Concentrate, Molecular Biology Grade	475916	209.3	—	100 ml
PBS Tablets	524650	—	—	1 ea
PBS-TWEEN® Tablets	524653	—	—	1 ea
PIPES, Free Acid, Molecular Biology Grade	528133	302.4	6.80	25 g 250 g
PIPES, Free Acid, ULTROL® Grade	528131	302.4	6.80	100 g, 1 kg
PIPES, Sesquisodium Salt, ULTROL® Grade	528132	335.8	6.80	100 g 1 kg
PIPPS	528315	330.4	3.73 <sup>2</sup>	10 g
Potassium Phosphate, Dibasic, Trihydrate, Molecular Biology Grade	529567	228.2	—	250 g 1 kg
Potassium Phosphate, Monobasic	529565	136.1	7.21 <sup>1</sup>	100 g, 500 g 1 kg

## BUFFERS (continued)

Product	Cat. No.	M.W.	pK <sub>a</sub> at 20° C	Size
Potassium Phosphate, Monobasic, Molecular Biology Grade	529568	136.1	7.21 <sup>1</sup>	250 g 1 kg
Sodium Citrate, Dihydrate	567444	294.1	3.13, 4.76, 6.40	1 kg
Sodium Citrate, Dihydrate, Molecular Biology Grade	567446	294.1	3.13 4.76 6.40	100 g 1 kg 5 kg
Sodium Phosphate, Dibasic	567550	142.0	7.21 <sup>1</sup>	500 g 1 kg
Sodium Phosphate, Dibasic, Molecular Biology Grade	567547	142.0	7.21 <sup>1</sup>	250 g 1 kg
Sodium Phosphate, Monobasic	567545	120.0	7.21 <sup>1</sup>	250 g, 500 g 1 kg
Sodium Phosphate, Monobasic, Monohydrate, Molecular Biology Grade	567549	138.0	7.21 <sup>1</sup>	250 g 1 kg
SSC Buffer, 20X Powder Pack, ULTROL® Grade	567780	—	—	2 pack
SSPE Buffer, 20X Powder Pack, ULTROL® Grade	567784	—	—	2 pack
TAE Buffer, 25X Powder Pack, ULTROL® Grade	574792	—	—	2 pack
TAPS, ULTROL® Grade	394675	243.2	8.40	100 g 1 kg
TBE Buffer, 10X Powder Pack, ULTROL® Grade	574796	—	—	2 pack
TE Buffer, pH 8.0, Molecular Biology Grade	574800	—	—	100 ml
TES, Free Acid, ULTROL® Grade	39465	229.3	7.50	100 g 1 kg
TES, Sodium Salt, ULTROL® Grade	394651	251.2	7.50	100 g, 1 kg
TG Buffer, 10X Powder Pack, ULTROL® Grade	585205	—	—	2 pack
TG-SDS Buffer, 10X Powder Pack, ULTROL® Grade	585207	—	—	2 pack
Tricine, ULTROL® Grade	39468	179.2	8.15	100 g 1 kg
Triethanolamine, Hydrochloride	641752	185.7	7.80	1 kg
Triethylammonium Acetate, 1 M Solution	625718	161.2	—	1 L
Tris Base, Molecular Biology Grade	648310	121.1	8.30	500 g 2.5 kg
Tris Base, ULTROL® Grade	648311	121.1	8.30	100 g, 500 g 1 kg, 5 kg 10 kg
Tris Buffer, 1 M, pH 8.0, Molecular Biology Grade	648314	—	—	100 ml
Tris Buffer, 100 mM, pH 7.4, Molecular Biology Grade	648315	—	—	100 ml
Tris, Hydrochloride, Molecular Biology Grade	648317	157.6	8.30	100 g 1 kg
Tris, Hydrochloride, ULTROL® Grade	648313	157.6	8.30	250 g, 500 g 1 kg, 5 kg

1. Phosphoric acid has three pK<sub>a</sub> values: pK<sub>a1</sub> = 2.12; pK<sub>a2</sub> = 7.21; pK<sub>a3</sub> = 12.32. Phosphate buffers are normally made from a combination of the monobasic and dibasic salts, titrated against each other to the correct pH.

2. pK<sub>a1</sub> = 3.73; pK<sub>a2</sub> = 7.96 (100 mM aqueous solution, 25°C, 100 mM).

Please call our Technical Service Department or your local sales office for more information on these products.

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