

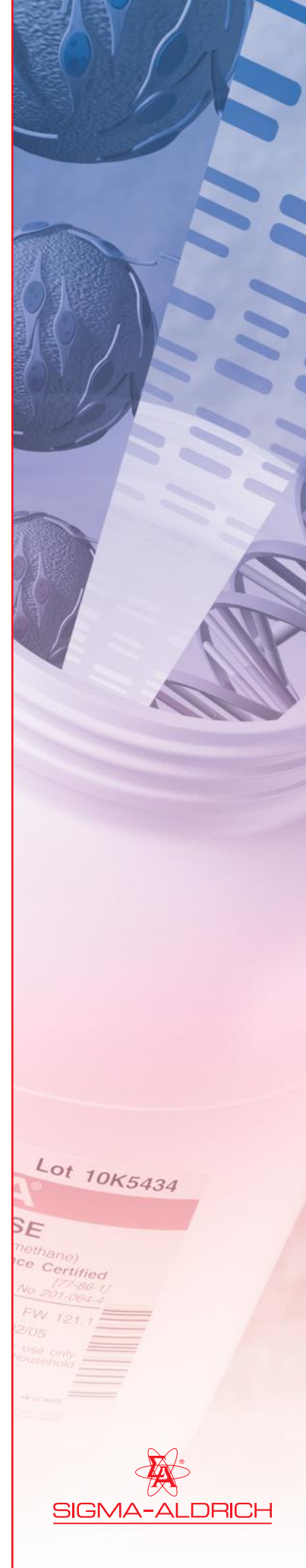
Buffer Chart

Useful pH Ranges of Selected Biological Buffers (25° C, 0.1 M)

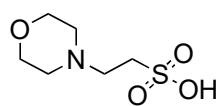
	pH	6	7	8	9	10	11	Useful pH Range	pKa (at 20°)	pKa (at 25°)	pKa (at 37°)
MES								5.5-6.7	6.16	6.10	5.97
BIS-TRIS								5.8-7.2	—	6.50	6.36
ADA								6.0-7.2	6.65	6.59	6.46
ACES								6.1-7.5	6.88	6.78	6.54
PIPES								6.1-7.5	6.80	6.76	6.66
MOPSO								6.2-7.6	—	6.90	6.75
BIS-TRIS PROPANE								6.3-9.5	—	6.8,9.0	—
BES								6.4-7.8	7.17	7.09	6.90
MOPS								6.5-7.9	7.13	7.20	7.70*
TES								6.8-8.2	7.50	7.40	7.16
HEPES								6.8-8.2	7.55	7.48	7.31
DIPSO								7.0-8.2	—	7.60	7.35
MOBS								6.9-8.3	—	7.60	—
TAPSO								7.0-8.2	—	7.60	7.39
TRIZMA								7.0-9.0	8.20	8.06	7.72
HEPPSO								7.1-8.5	—	7.80	6.66
POPSO								7.2-8.5	—	7.80	7.63
TEA								7.3-8.3	—	7.80	—
EPPS								7.3-8.7	—	8.00	—
TRICINE								7.4-8.8	8.16	8.05	7.80
GLYCYLGLYCINE								7.5-8.9	—	8.20	—
BICINE								7.6-9.0	8.35	8.26	8.04
HEPBS								7.6-9.0	—	8.30	—
TAPS								7.7-9.1	8.31	8.40	8.90*
AMPD								7.8-9.7	—	8.80	—
TABS								8.2-9.6	—	8.90	—
AMPSO								8.3-9.7	—	9.00	9.10
CHES								8.6-10.0	—	9.30*	9.80*
CAPSO								8.9-10.3	—	9.60	9.43
AMP								9.0-10.5	—	9.70	—
CAPS								9.7-11.1	10.24	10.40	10.78
CABS								10.0-11.4	—	10.70	—

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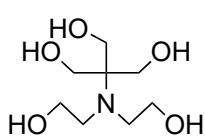
*Determined by Sigma



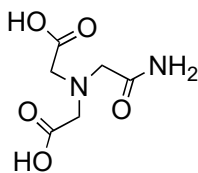
SIGMA-ALDRICH



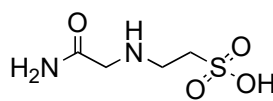
MES
CAS:4432-31-9



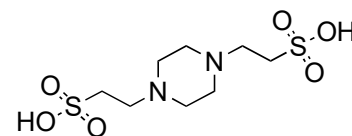
BIS-TRIS
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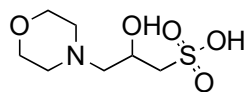
ADA
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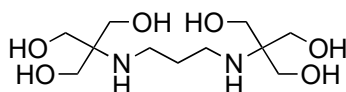
ACES
CAS:7365-82-4



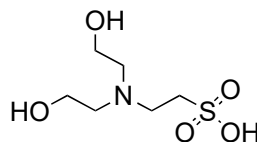
PIPES
CAS:5625-37-6



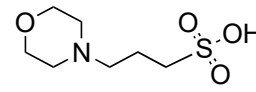
MOPSO
CAS:68399-77-9



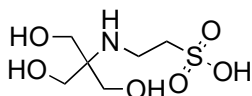
BIS-TRIS PROPANE
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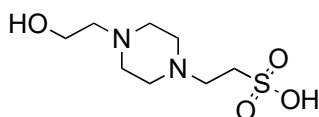
BES
CAS:10191-18-1



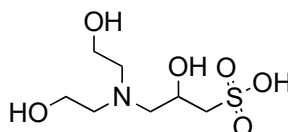
MOPS
CAS:1132-61-2



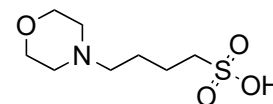
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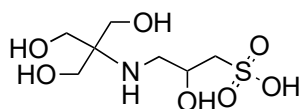
HEPES
CAS:7365-45-9



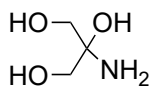
DIPSO
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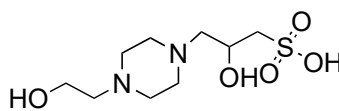
MOBS
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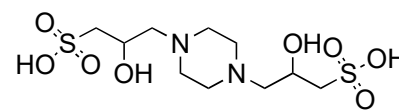
TAPSO
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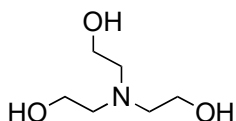
TRIZMA
CAS:77-86-1



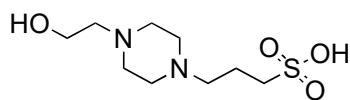
HEPPSO
CAS:68399-78-0



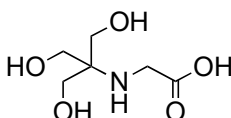
POPSO
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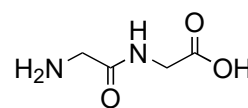
TEA
CAS:102-71-6



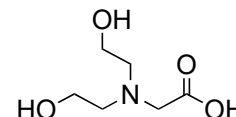
EPPS
CAS:16052-06-5



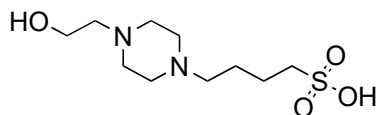
TRICINE
CAS:5704-04-1



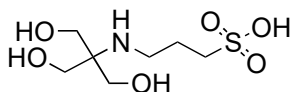
GLYCYLGLYCINE
CAS:556-50-3



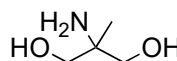
BICINE
CAS:150-25-4



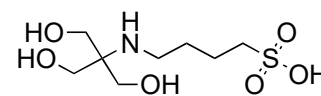
HEPBS
CAS:161308-36-7



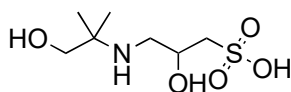
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CAS:29915-38-6



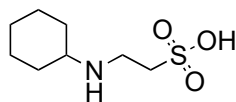
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CAS:115-69-5



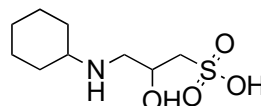
TABS
CAS:54960-65-5



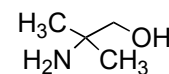
AMPSO
CAS: 68399-79-1



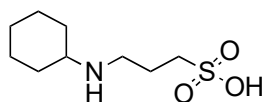
CHES
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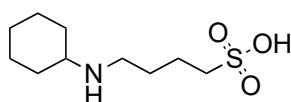
CAPSO
CAS:73463-39-5



AMP
CAS:124-68-5



CAPS
CAS:1135-40-6



CABS
CAS:161308-34-5

Chemical structures were kindly provided
by Quan Ya Nan