anatrace

Technical Bulletin 111

Detergent Stability

The stability of a representative sample of detergents has been tested both in solution and in solid form at Anatrace®. The purpose of this study was to determine guidelines for shipping and storage of solid detergents and to give some indication of their stability in solution.

To determine their stability during shipment, representative detergents Dodceyl-β-D-Maltoside, CYMAL®-3, HEGA®-10, MEGA-9, Octyl-β-D-Glucoside, CHAPS, CHAPSO, Dodecyl-N-N-Dimethylglycine, Octyl-β-D-Galactoside, Sodium Cholate, Dodecyl-N-N-Dimethylamine Oxide, and Fos-Choline®-10 were stored at 40°C for one week and at room temperature for two weeks.

No deterioration was noted after this time period and the specifications for each sample were remeasured. Thus, all detergent samples remained within specifications. See below for specifications for Dodecyl-β-D-Maltoside, Fos-Choline-10, and Octyl-β-D-Glucoside.

To obtain an indication of the stability of detergents in solution, 10% aqueous solutions of Tetradecyl Maltoside, Dodecyl Maltoside and HEGA-10 were heated to 55°C for two hours. Measurement of the percent purity by HPLC, pH, conductance, and absorbance indicated these detergents had not deteriorated during this heat cycle.

It is Anatrace policy to supply the best quality detergents and reagents. Typically, your order will be shipped by overnight service the same day it is received. International orders will be sent by priority air. Neither domestic nor international orders containing detergents will be shipped with a cold pack. However, for storage of a month or longer, it is recommended that detergents be stored desiccated at -20°C.

Anatrace products are chosen for their uniquely pure molecules – and the exacting chemistry behind them. From compounds designed to disrupt cell membranes to products that stabilize or solubilize unstable macromolecules and proteins, we're always raising the bar. So your structural studies, functional biology work, or chemical synthesis project will yield incredibly reliable results.

D310 **n-Dodecyl–β–D-Maltopyranoside, Anagrade**

[n-Dodecyl–β–D-Maltoside / Lauryl Maltoside / Dodecyl 4-O–α–D-Glucopyranosyl–β–D-Glucopyranoside / DDM / LM]

Chemical Properties:

FW: 510.6 [69227-93-6] $C_{24}H_{46}O_{11}$
CMC (H_2O): ~ 0.17 mM[1] (0.0087%)
CMC (0.2 M NaCl): ~ 0.12 mM[2]
Aggregation number (H_2O): ~ 78-149[1-2]
dn/dc: 0.1435 ml/gm[4]
Micelle size: 72 kDa[5]

Product Specifications:

Purity (β + α): ≥ 99% by HPLC analysis
For molar volume check reference 3.
Percent anomer: < 2 α (HPLC)
Percent dodecanol: < 0.005 (HPLC)
pH (1% solution in water): 5-8
Solubility in water at 0-5°C: ≥ 20%
Conductance (10% solution in water): < 40 µS
Percent fluorescence due to a 0.1% solution in water at 345 nm: < 10
Absorbance of a 1% solution in water:
340 nm: < 0.02
280 nm: < 0.04
260 nm: < 0.06
225 nm: < 0.1

F304 **Fos-Choline-10, Anagrade**

[n-Decyl Phosphocholine]

Chemical Properties:

FW: 323.4 [70504-28-8] $C_{15}H_{34}NO_4P$

CMC (H_2O): ~ 11 mM[6] (0.35%)

Aggregation number (H_2O): ~ 24[4]

dn/dc (H_2O): 0.1347 ml/gm[4]

Product Specifications:

Purity: ≥ 99% by HPLC analysis

pH (1% solution in water): 5-8

Solubility in water at 0-5°C: ≥ 20%

Conductance (10% solution in water): < 200 µS

Percent fluorescence due to a 0.1% solution in water at 345 nm: < 10

Absorbance of a 1% solution in water:

340 nm: < 0.05

280 nm: < 0.08

260 nm: < 0.1

O311 **n-Octyl–β–D-Glucopyranoside, Anagrade**

[n-Octyl–β–D-Glucoside / OG / Octyl Glucoside]

Chemical Properties:

FW: 292.4 [29836-26-8] $C_{14}H_{28}O_6$

CMC (H_2O): ~ 18-20 mM[7] (0.53%)

CMC (0.1 M NaCl): ~ 23.4 mM[8]

Aggregation number (H_2O): ~ 27-100[7]

dn/dc: 0.1159 ml/gm

Product Specifications:

Purity (β + α): ≥ 99% by HPLC analysis

For molar volume check reference 3.

Percent anomer: < 2 α (HPLC)

Percent octanol: < 0.005 (HPLC)

pH (1% solution in water): 5-8

Solubility in water at 0-5°C: ≥ 20%

Conductance (10% solution in water): < 40 µS

Percent fluorescence due to a 0.1% solution in water at 345 nm: < 10

Absorbance of a 1% solution in water:

340 nm: < 0.02

280 nm: < 0.04

260 nm: < 0.06

225 nm: < 0.1

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