Detergent Adsorption Capacity of CALBIOSORB™ Adsorbent

<table>
<thead>
<tr>
<th>Detergent</th>
<th>Mol. Wt.</th>
<th>Type</th>
<th>(mg detergent/ml resin)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cetyltrimethylammonium</td>
<td>364.5</td>
<td>Cationic</td>
<td>120</td>
</tr>
<tr>
<td>Bromide (CTAB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHAPS</td>
<td>614.9</td>
<td>Zwitterionic</td>
<td>110</td>
</tr>
<tr>
<td>Cholic Acid, Sodium Salt</td>
<td>430.6</td>
<td>Anionic</td>
<td>73</td>
</tr>
<tr>
<td>n-Dodecyl-β-D-maltoside</td>
<td>510.6</td>
<td>Non-ionic</td>
<td>66</td>
</tr>
<tr>
<td>n-Hexyl-β-D-glucopyranoside</td>
<td>264.3</td>
<td>Non-ionic</td>
<td>78</td>
</tr>
<tr>
<td>Lauryldimethylamine Oxide</td>
<td>229.4</td>
<td>Zwitterionic</td>
<td>66</td>
</tr>
<tr>
<td>n-Octyl-β-D-glucopyranoside</td>
<td>292.4</td>
<td>Non-ionic</td>
<td>132</td>
</tr>
<tr>
<td>Sodium Dodecyl Sulfate (SDS)</td>
<td>288.5</td>
<td>Anionic</td>
<td>94</td>
</tr>
<tr>
<td>n-Tetradecyl-β-D-maltoside</td>
<td>538.6</td>
<td>Non-ionic</td>
<td>161</td>
</tr>
<tr>
<td>TRITON® X-100 Detergent</td>
<td>647.0 (Av.)</td>
<td>Non-ionic</td>
<td>157</td>
</tr>
<tr>
<td>TWEEN® 20, 1228.0 (Av.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROTEIN GRADE® Detergent</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Detergent absorption capacities were measured by allowing 1.0 g of buffer-free CALBIOSORB™ Adsorbent to equilbrate at room temperature with an excess of detergent (10 ml of 2.0% in H₂O) for 24 hours, then measuring the amount of unabsorbed detergent remaining in the supernatant by gravimetric analysis.

We Offer the Convenience of Sets!

**APD Detergent Set**
Cat. No. 178400
1 set
Contains 1 g each of the following non-ionic detergents: APO-8, APO-9, APO-10, APO-11, and APO-12.

**Detergent Test Kit**
Cat. No. 263451
1 kit
Contains 1 g each of the following components:
- n-Hexyl-
- n-Heptyl-
- n-Octyl-
- n-Nonyl-
- n-Dodecyl-β-D-maltoside.

**Detergent Variety Pack**
Cat. No. 263458
1 pack
Contains 1 g each of the following components:
- CHAPS, Deoxycholic Acid,
- n-Octyl-β-D-Glucopyranoside,
- n-Octyl-β-D-thioglucopyranoside,
- and ZWITTERGENT® 3-14.

**NDSB Set**
Cat. No. 480012
1 set
Contains 5 g each of NDSB-195, NDSB-256, and 25 g of NDSB-201.

**ZWITTERGENT® Test Kit**
Cat. No. 693030
1 kit
Contains 1 g each of the following components:
- ZWITTERGENT® 3-08,
- ZWITTERGENT® 3-10,
- ZWITTERGENT® 3-12,
- ZWITTERGENT® 3-14,
- and ZWITTERGENT® 3-16.

**ASB ZWITTERGENT® Set**
Cat. No. 182753
1 set
Contains 1 g each of the following zwitterionic amidosulfobetaine (ASB) detergents:
- ASB-14,
- ASB-16,
- and ASB-C8Ø.

**ProteoDetergent™ Set**
The set contains 10 g of Triton® X-100 (Cat. No. 648462) and 1 g each of ASB-14 (Cat. No. 182750), ASB-14-4 (Cat. No. 182751), ASB-16 (Cat. No. 182755), ASB-C8Ø (Cat. No. 182730), CHAPS (Cat. No. 220201),
- n-Dodecyl-β-D-maltopyranoside (Cat. No. 324355), and Zwittergent® 3-10 (SB 3-10, Cat. No. 693021).

**CALBIOSORB™ Adsorbent**
Cat. No. 206550
50 ml

**CALBIOSORB™ Adsorbent, Prepacked Columns**
Cat. No. 206552
1 set
Note: 1 set contains 3 columns.

**CALBIOSORB™ Adsorbent, Refilled Columns**
Cat. No. 206560
1 set
Note: 1 set contains 5 columns.

*Prices and availability subject to change without notice.*

Copyright © 2003 EMD Biosciences, Inc. All rights reserved. EMD Biosciences, a division of Merck & Co., Inc. is a trademark of Merck & Co., Inc. Used under license. All other trademarks are the property of their respective owners. This information is subject to change without notice. For the latest product information, contact your local sales office.

www.calbiochem.com

e-mail: technical@calbiochem.com

or contact your local sales office.

Detergents

Solubilize Your Membrane Proteins with Top Quality Detergents and Solubilizing Agents From CALBIOCHEM®

**Advancing your life science discoveries™**
Guidelines for Choosing a Detergent

A membrane protein is considered isolated if it is present in the supernatant only after high-speed centrifugation of a crude extract. A membrane protein is considered purified if it is present in the supernatant only after high-speed centrifugation of a crude extract, followed by ion exchange chromatography using an appropriate detergent. If the detergent is not harmful to the activity of the protein, the use of ion exchange chromatography can also be helpful in selecting a suitable detergent.

1. The first step in choosing a detergent is to identify the concentration range at which the protein is present. The concentration range can be divided into high concentration (at or greater than CMC) and low concentration (below CMC).

2. The choice of detergent is critical. The detergent should be chosen to minimize the risk of precipitation, solubilization, or denaturation of the protein. The detergent should also be chosen to solubilize the protein in a way that it can be further purified.

3. The method of detergent removal can be an important consideration. If the protein is to be isolated, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

4. Preservation of biological or enzymological activity may require experimenting with different detergents. If the proteins are sensitive to detergents, a series of detergents at different concentrations should be used until the optimal detergent is found.

5. Since TRITON® X-100 contains aromatic rings that absorb at 260-280 nm, this detergent should be avoided if the protocols require UV monitoring of protein.

6. Detergents of utmost purity should be used since some detergents such as TRITON® X-100 can cause protein aggregation.

7. For general use, ZWITTERGENT® 3-12 Detergent, 10% Solution, Sterile-Filtered, Molecular Biology Grade should be used for isolation of a membrane protein in its biologically active form.

8. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

9. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

10. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

11. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

12. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

13. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

14. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

15. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

16. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

17. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

18. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

19. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

20. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

21. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

22. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

23. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

24. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

25. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

26. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

27. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

28. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

29. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

30. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

31. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

32. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

33. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

34. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

35. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

36. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

37. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

38. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

39. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

40. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

41. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

42. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

43. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

44. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

45. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

46. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

47. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

48. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

49. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

50. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

51. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

52. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

53. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

54. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

55. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

56. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

57. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

58. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

59. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.

60. For isolation of membrane proteins, a detergent with a high CMC should be avoided if the protocols require UV monitoring of protein.
### Guidelines for Choosing a Detergent

A water-soluble protein is considered solubilized if it is present in the supernatant after any non-denaturing buffer of choice or a key component (e.g., lipids) is in a detergent. If a detergent is identified as having solubilized a protein, it can be used to prepare that protein for further analysis. Here are some considerations for choosing a detergent:

1. **Purity and Quality**: Detergents should be of the highest purity possible to avoid contamination. Avoid detergents that contain known contaminants such as DNase, RNase, and proteases.

2. **Solubility at Working Temperature**: The detergent should be soluble at the temperature of choice.

3. **Supernatant Yield**: The detergent should provide a high yield of protein in the supernatant. Given the large number of detergents available today, choosing an appropriate detergent can be a difficult process. Some of the points outlined below should be considered.

4. **Supernatant Yield**: The detergent should provide a high yield of protein in the supernatant. Given the large number of detergents available today, choosing an appropriate detergent can be a difficult process. Some of the points outlined below should be considered.

5. **Supernatant Yield**: The detergent should provide a high yield of protein in the supernatant. Given the large number of detergents available today, choosing an appropriate detergent can be a difficult process. Some of the points outlined below should be considered.

6. **Supernatant Yield**: The detergent should provide a high yield of protein in the supernatant. Given the large number of detergents available today, choosing an appropriate detergent can be a difficult process. Some of the points outlined below should be considered.

7. **Supernatant Yield**: The detergent should provide a high yield of protein in the supernatant. Given the large number of detergents available today, choosing an appropriate detergent can be a difficult process. Some of the points outlined below should be considered.

8. **Supernatant Yield**: The detergent should provide a high yield of protein in the supernatant. Given the large number of detergents available today, choosing an appropriate detergent can be a difficult process. Some of the points outlined below should be considered.

9. **Supernatant Yield**: The detergent should provide a high yield of protein in the supernatant. Given the large number of detergents available today, choosing an appropriate detergent can be a difficult process. Some of the points outlined below should be considered.

10. **Supernatant Yield**: The detergent should provide a high yield of protein in the supernatant. Given the large number of detergents available today, choosing an appropriate detergent can be a difficult process. Some of the points outlined below should be considered.

### Table of Detergents

<table>
<thead>
<tr>
<th>Product</th>
<th>Type</th>
<th>Catalog No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Octanoylsucrose</td>
<td>Non-Ionic</td>
<td>655205</td>
<td>(\beta)-D-maltoside, ULTROL® Grade</td>
</tr>
<tr>
<td>n-Octanoylsucrose</td>
<td>Non-Ionic</td>
<td>655204</td>
<td>(\beta)-D-maltoside, ULTROL® Grade</td>
</tr>
<tr>
<td>n-Octanoylsucrose</td>
<td>Non-Ionic</td>
<td>655203</td>
<td>(\beta)-D-maltoside, ULTROL® Grade</td>
</tr>
<tr>
<td>n-Octanoylsucrose</td>
<td>Non-Ionic</td>
<td>655202</td>
<td>(\beta)-D-maltoside, ULTROL® Grade</td>
</tr>
<tr>
<td>n-Octanoylsucrose</td>
<td>Non-Ionic</td>
<td>655201</td>
<td>(\beta)-D-maltoside, ULTROL® Grade</td>
</tr>
<tr>
<td>n-Octanoylsucrose</td>
<td>Non-Ionic</td>
<td>655200</td>
<td>(\beta)-D-maltoside, ULTROL® Grade</td>
</tr>
</tbody>
</table>

### Additional Notes

- **For Support E-mail techsales@calbiochem.com**
- **www.calbiochem.com**

---

**For Support E-mail techsales@calbiochem.com**

**www.calbiochem.com**
Guidelines for Choosing a Detergent

A membrane protein is considered solubilized if it is present in the supernatant after centrifugation. The solubility of a detergent is dependent on its concentration; in general, the higher the concentration, the better the solubilization. It is important to test the effect of different detergents on biological activity of the protein. For this reason, it is recommended to test a variety of detergents.

1. The first step in the sequence of the detergent is to determine the concentration at which solubilization is achieved. Generally, detergent concentration is determined by solubilization of a protein with known solubility characteristics.

2. In some cases, it has been observed that the inclusion of non-detergent sulfo-bridges are problematic. The inclusion of non-detergent sulfo-bridges should be avoided if the protocols require UV monitoring of proteins.

3. Alternatively, if ion exchange chromatography is utilized, a non-ionic detergent or proline should be avoided if the protocols require UV monitoring of proteins.

4. For some proteins, biological activity is lost on inactivation. For some proteins biological activity is not affected by inactivation.

5. Since TRITON® X-100 contains aromatic rings that absorb at 260-280 nm, this detergent can be used to solubilize proteins at concentrations where this absorption is not problematic.

6. For proteins that are sensitive to detergents, a detergent with a high CMC is clearly preferred.

7. Inactivated.

8. The first step is a survey of the literature. A detergent that has been previously used can be helpful in selecting a suitable detergent.

9. In some cases, it has been observed that the inclusion of non-detergent sulfo-bridges are problematic. The inclusion of non-detergent sulfo-bridges should be avoided if the protocols require UV monitoring of proteins.

10.性价比的 PROTEIN GRADE® or ULTROL® GRADE detergents that have been previously used are available.

11. For Support E-mail technical@calbiochem.com

For Support E-mail techsales@calbiochem.com

www.calbiochem.com

www.calbiochem.com
Guidelines for Choosing a Detergent

A membrane protein is considered solubilized if it is present in the supernatant after one hour centrifugation of a lysate or a homogenate at 100,000 x g. In most cases, it is also important that the biological activity of the protein preserved in the supernatant is at least equal to that of the protein in the intact cell. The type of detergent used will affect the activity of the protein. For some proteins biological activity is inactivated.

1. The first step is a survey of the literature. A detergent that has been used previously for isolation of a membrane protein in its biologically active form should be compared with others. Hence, some “trial and error” may be required for determining optimal conditions.

2. Betaines (NDSBs) with detergents in the isolation buffer dramatically improves recovery of the protein. A non-toxic detergent should be preferred over a toxic one. For example, digitonin will work better than Triton X-100. TRITON® X-114 undergoes a phase separation at room temperature.

3. A membrane protein is considered solubilized if it is present in the supernatant after one hour centrifugation of a lysate or a homogenate at 100,000 x g. In most cases, it is also important that the biological activity of the protein preserved in the supernatant is at least equal to that of the protein in the intact cell. The type of detergent used will affect the activity of the protein. For some proteins biological activity is inactivated.

4. The method of a detergent samples, to an important consideration, is that detergents work at a high CMC, which is achieved by dilution. Thus, the solubilization of a membrane protein by detergents should be routinely attempted. For gel filtration of proteins, detergents with a negative charge such as SDS will work better than non-ionic detergents such as Triton X-100. Alternatively, if ion exchange chromatography is utilized, a non-ionic detergent or betaines (NDSBs) with detergents in the isolation buffer dramatically improves recovery of the protein. A non-toxic detergent should be preferred over a toxic one. For example, digitonin will work better than Triton X-100. TRITON® X-114 undergoes a phase separation at room temperature.

5. For as yet unknown reasons, specific detergents often work better for particular membranes. Hence, some “trial and error” may be required for determining optimal conditions.

6. The presence of oxidizing contaminants such as DNase, RNase, and proteases may interfere with protein recovery. Proteases are generally inactivated by heating the protein to 100°C inactivating these proteins. Peroxidase is inactivated by reducing the pH to 3.0. The presence of peroxides as contaminants is generally known to contain peroxides as contaminants.

7. Betaines (NDSBs) with detergents in the isolation buffer dramatically improves recovery of the protein. A non-toxic detergent should be preferred over a toxic one. For example, digitonin will work better than Triton X-100. TRITON® X-114 undergoes a phase separation at room temperature.

8. A membrane protein is considered solubilized if it is present in the supernatant after one hour centrifugation of a lysate or a homogenate at 100,000 x g. In most cases, it is also important that the biological activity of the protein preserved in the supernatant is at least equal to that of the protein in the intact cell. The type of detergent used will affect the activity of the protein. For some proteins biological activity is inactivated.

9. As yet unknown reasons, specific detergents often work better for particular membranes. Hence, some “trial and error” may be required for determining optimal conditions.
### Detergent Adsorption Capacity of **CALBIOSORB™** Adsorbent

<table>
<thead>
<tr>
<th>Detergent</th>
<th>Type</th>
<th>Mol. Wt.</th>
<th>(mg detergent/ml resin)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cetyltrimethylammonium Bromide (CTAB)</td>
<td>Cationic</td>
<td>364.5</td>
<td>120</td>
</tr>
<tr>
<td>CHAPS</td>
<td>Zwitterionic</td>
<td>614.9</td>
<td>110</td>
</tr>
<tr>
<td>Cholic Acid, Sodium Salt</td>
<td>Anionic</td>
<td>430.6</td>
<td>73</td>
</tr>
<tr>
<td>n-Dodecyl-β-D-maltoside</td>
<td>Non-ionic</td>
<td>510.6</td>
<td>66</td>
</tr>
<tr>
<td>n-Hexyl-β-D-glucopyranoside</td>
<td>Non-ionic</td>
<td>264.3</td>
<td>78</td>
</tr>
<tr>
<td>Lauryldimethylamine Oxide</td>
<td>Zwitterionic</td>
<td>229.4</td>
<td>66</td>
</tr>
<tr>
<td>n-Octyl-β-D-glucopyranoside</td>
<td>Non-ionic</td>
<td>292.4</td>
<td>132</td>
</tr>
<tr>
<td>Sodium Dodecyl Sulfate (SDS)</td>
<td>Anionic</td>
<td>288.5</td>
<td>94</td>
</tr>
<tr>
<td>n-Tetradecyl-β-D-maltoside</td>
<td>Non-ionic</td>
<td>538.6</td>
<td>161</td>
</tr>
<tr>
<td>TRITON® X-100 Detergent</td>
<td>Non-ionic</td>
<td>647.0 (Av.)</td>
<td>157</td>
</tr>
<tr>
<td>TWEEN® 20, 1228.0 (Av.)</td>
<td>Non-ionic</td>
<td>1228.0</td>
<td>122</td>
</tr>
</tbody>
</table>

Detergents absorption capacities were measured by allowing 1.0 g of buffer-free CALBIOSORB™ Adsorbent to equilibrate at room temperature with an excess of detergent (10 ml of 2.0% in H₂O) for 24 hours, then measuring the amount of unabsorbed detergent remaining in the supernatant by gravimetric analysis.
## Detergent Adsorption Capacity of CALBIOSORB™ Adsorbent

<table>
<thead>
<tr>
<th>Detergent Adsorption Capacity</th>
<th>CALBIOSORB™ Adsorbent</th>
<th>CALBIOSORB™ Adsorbent, Prepacked Columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>CALBIOSORB™ Adsorbent</td>
<td>Cat. No. 206550</td>
<td>50 ml</td>
</tr>
<tr>
<td>CALBIOSORB™ Adsortent, Prepacked Columns</td>
<td>Cat. No. 206552</td>
<td>1 set Note: 1 set contains 3 columns</td>
</tr>
</tbody>
</table>

### Detergent Adsorption Capacity

<table>
<thead>
<tr>
<th>Detergent</th>
<th>Mol. Wt.</th>
<th>Type</th>
<th>(mg detergent/ml resin)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cetyltrimethylammonium (CTAB)</td>
<td>364.5</td>
<td>Cationic</td>
<td>120</td>
</tr>
<tr>
<td>CHAPS</td>
<td>614.9</td>
<td>Zwitterionic</td>
<td>110</td>
</tr>
<tr>
<td>Cholic Acid, Sodium Salt</td>
<td>430.6</td>
<td>Anionic</td>
<td>73</td>
</tr>
<tr>
<td>n-Dodecyl-β-D-maltoside</td>
<td>510.6</td>
<td>Non-ionic</td>
<td>66</td>
</tr>
<tr>
<td>n-Hexyl-β-D-glucopyranoside</td>
<td>264.3</td>
<td>Non-ionic</td>
<td>78</td>
</tr>
<tr>
<td>Lauryldimethylamine Oxide</td>
<td>229.4</td>
<td>Zwitterionic</td>
<td>66</td>
</tr>
<tr>
<td>n-Octyl-β-D-glucopyranoside</td>
<td>292.4</td>
<td>Non-ionic</td>
<td>132</td>
</tr>
<tr>
<td>Sodium Dodecyl Sulfate (SDS)</td>
<td>288.5</td>
<td>Anionic</td>
<td>94</td>
</tr>
<tr>
<td>n-Tetradecyl-β-D-maltoside</td>
<td>538.6</td>
<td>Non-ionic</td>
<td>161</td>
</tr>
<tr>
<td>TRITON® X-100 Detergent</td>
<td>647.0 (Av.)</td>
<td>Non-ionic</td>
<td>157</td>
</tr>
<tr>
<td>TWEEN® 20</td>
<td>1228.0 (Av.)</td>
<td>Non-ionic</td>
<td>122</td>
</tr>
</tbody>
</table>

### We Offer the Convenience of Sets!

- **APD Detergent Set** (Cat. No. 178400) - 1 set
  - Contains 1 g each of the following non-ionic detergents: APO-8, APO-9, APO-10, APO-11, and APO-12.

- **Detergent Test Kit** (Cat. No. 263451) - 1 kit
  - Contains 1 g each of the following components: n-Hexyl-, n-Heptyl-, n-Octyl-, and n-Nonyl-β-D-glucopyranoside, and n-Dodecyl-β-D-maltoside.

- **Detergent Variety Pack** (Cat. No. 263458) - 1 pack
  - Contains 1 g each of the following components: CHAPS, Deoxycholic Acid, n-Octyl-β-D-glucopyranoside, n-Octyl-β-D-thioglucopyranoside, and ZWITTERGENT® 3-14.

- **NDSB Set** (Cat. No. 480012) - 1 set
  - Contains 5 g each of NDSB-195, NDSB-256, and 25 g of NDSB-201.

- **ZWITTERGENT® Test Kit** (Cat. No. 693030) - 1 kit
  - Contains 1 g each of the following components: ZWITTERGENT® 3-08, ZWITTERGENT® 3-10, ZWITTERGENT® 3-12, ZWITTERGENT® 3-14, and ZWITTERGENT® 3-16.

- **ASB ZWITTERGENT® Set** (Cat. No. 182753) - 1 set
  - Contains 1 g each of the following zwitterionic amidosulfobetaine (ASB) detergents: ASB-14, ASB-16, and ASB-C8Ø.

- **ProteoDetergent™ Set** (Cat. No. 539751) - 1 set
  - Contains 10 g of Triton® X-100 (Cat. No. 648462) and 1 g each of ASB-14 (Cat. No. 182750), ASB-14-4 (Cat. No. 182751), ASB-16 (Cat. No. 182755), ASB-C8Ø (Cat. No. 182730), CHAPS (Cat. No. 220201), n-Dodecyl-β-D-maltopyranoside (Cat. No. 324355), and Zwittergent® 3-10 (SB 3-10, Cat. No. 693021).

### Non-Detergent Sulfobetaines (NDSBs)

<table>
<thead>
<tr>
<th>NDSB</th>
<th>Mol. Wt.</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>NDSB-195</td>
<td>480001</td>
<td>Cat. No. 5 g 25 g</td>
</tr>
<tr>
<td>NDSB-201</td>
<td>480005</td>
<td>Cat. No. 25 g 250 g</td>
</tr>
<tr>
<td>NDSB-211</td>
<td>480013</td>
<td>Cat. No. 1 g 5 g</td>
</tr>
<tr>
<td>NDSB-221</td>
<td>480014</td>
<td>Cat. No. 5 g 25 g</td>
</tr>
<tr>
<td>NDSB-256</td>
<td>480010</td>
<td>Cat. No. 5 g 25 g</td>
</tr>
</tbody>
</table>

### Detergent Absorption Capacity

Detergents were absorbed by allowing 1.0 g of buffer-free CALBIOSORB™ Adsorbent to equilibrate at room temperature with an excess of detergent (10 ml of 2.0% in H₂O) for 24 hours, then measuring the amount of unabsorbed detergent remaining in the supernatant by gravimetric analysis.