

# A.G. Scientific, Inc.

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## PRODUCT INFORMATION

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### Protein Solubilizer 35

Active Ingredient: Supplied as a highly purified,  
Sterile, 10% aqueous solution of  
**Brij® -35**

Aseptically Manufactured and Filled

**P-1504**

**LOT# F1261**

**10 X 5 ml Ampoules**

**EXPIRATION DATE: November 2017**

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### Chemically and Biologically Pure

Features		Benefits
Very low contaminating Aldehyde and Peroxide concentration < 0.1 mM	→	To maximize yields of biologically active proteins
Extremely low conductivity < 5 µmhos	→	Prevents problems associated with interfering salts and metal ions
10% solution in sterile water for injection	→	High purity and ease of dispensing of diluted solutions
Prescored 5 ml Amber Ampoules	→	Small package size with amber ampoules to maximize shelf life
Sterile, U.S.P Grade	→	To maintain biological purity
Aseptically manufactured and filled, Large Scale GMP capabilities	→	For Research use through therapeutic Production capabilities

### Non-Ionic Detergents

Non-ionic detergents contain uncharged, hydrophilic head groups that consist of either polyoxyethylene moieties as in TWEEN and TRITON or glycosidic groups as in octyl glucoside and dodecyl maltoside. In general, non-ionic detergents are better suited for breaking lipid-lipid and lipid-protein interactions than protein-protein interactions. Hence, they are considered non-denaturant and are widely used in the isolation of membrane proteins in their biologically active form.

The use and performance of a detergent is dependent on a number of general properties such as hydrophobicity, CMC, aggregation number, charge etc...(TABLE-1 : Properties of Non-Ionic Detergents).

Several investigators have reported problems associated with aldehyde and peroxide impurities in polyoxyethylene detergents<sup>5,6,8</sup>. There has also been documented evidence of support of microbial growth and toxic metabolite production in non sterilized aqueous solutions of these detergents.

Our product line of Highly purified, Sterile, 10% aqueous solutions of detergents should offer a definite advantage to those working with sensitive membrane-bound proteins.

**TABLE -1: Properties of Non-Ionic Detergents**

Product	Cat.No.	M.W. <sup>a</sup>	CMC <sup>b</sup> (mM)	Agg. No.	Avg. Micellar Wt.	HLB No.	Cloud Point
<b>Protein Solubilizer 80</b> (10% Soln of Tween 80)	P-1498	1310	0.012	58	76,000	15	-
<b>Protein Solubilizer 20</b> (10% Soln of Tween 20)	P-1502	1228	0.059	-	-	16.7	-
<b>Protein Solubilizer X-100</b> (10% Soln of Triton X-100)	P-1500	625	0.2-0.9	140	80,000	13	64°C
<b>Protein Solubilizer X-114</b> (10% Soln of Triton X-114)	P-1496	427	0.35	-	-	12.4	22°C
<b>Protein Solubilizer 35</b> (10% Soln of Brij-35)	P-1504	1198	0.09	40	48,000	16.9	-
<b>Protein Solubilizer 40</b> (10% Soln of NP-40)	P-1505	603	0.05-0.3	-	-	13.1	80°C
<b>Protein Solubilizer Set-1</b> (5 Sample Set: 2X5 ml each)	P-1503	-	-	-	-	-	-

a. Average molecular weights for detergents composed of mixtures of chain lengths; b. Temperature: 20-25°C

### References

1. Banerjee, P., et al. (1993). Differential solubilization of membrane lipids by detergents. *Arch. Biochem. Biophys.* **305**, 68.
2. Neugebauer, J. M. (1990). Detergents: An overview. *Methods. Enzymol.* **182**, 239.
3. Furth, A. H., et al. (1984). Separating detergents from proteins. *Methods. Enzymol.* **104**, 318.
4. Hjelmeland, L. M., and Chrambach, A. (1984). Solubilization of functional membrane proteins. *Methods. Enzymol.* **104**, 305.
5. Ashani, Y. and Catravas, G. (1980). Highly reactive impurities in Triton X-100 and Brij 35: partial characterization and removal. *Anal. Biochem.* **109**, 55-62.
6. Chang, H. W. and Bock E. (1980). Pitfalls in the use of commercial nonionic detergents for the solubilization of integral membrane proteins: sulfhydryl oxidizing contaminants and their elimination. *Anal. Biochem.* **104**, 112-117.
7. Helenius, A., McCaslin, D. R., Fries, E., and Tanford, C. (1979). Properties of detergents. *Methods. Enzymol.* **56**, 734-749.
8. Lever, M. (1977). Peroxides in detergents as interfering factors in biochemical analysis. *Anal. Biochem.* **83**, 274.
9. Slinde, E., and Flatmark, T. (1976). Effect of the hydrophile-lipophile balance of non-ionic detergents on the solubilization of biological membranes and their integral b-type cytochromes. *Biochim. Biophys. Acta.* **455**, 796.
10. Helenius, A. and Simons, K. (1975). Solubilization of membranes by detergents. *Biochim. Biophys. Acta.* **415**, 29-79.

Brij is a registered trademark of ICI Surfactants.

Product Manufactured by:

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**BIOCHEMICALS**  
California, U.S.A.

Product Marketed by:

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