## THE DOZN"SCALE



Based on the 12 Principles of Green Chemistry\*, DOZN helps researchers, scientists, and manufacturers increase performance and efficiency while reducing human and environmental impact.

\*Paul T. Anastas and John C. Warner, 1991.

## Poly-L-glutamic acid sodium salt (P4886)

| 12 Principles of Green Chemistry |   | Percentage of Improvement |     | Results                           |
|----------------------------------|---|---------------------------|-----|-----------------------------------|
| Ato                              | om Economy                                    | N/A                       |     |                                   |
| Wa                               | aste Prevention                               | N/A                       |     |                                   |
| Red                              | duce Derivatives                              | 6%                        |     | Reduced derivative steps          |
| Rer                              | newable Feedstocks Use                        | N/A                       |     |                                   |
| Rea                              | al-Time Pollution Prevention                  | N/A                       |     |                                   |
| (Cat                             | talyst  | N/A                       |     |                                   |
| Ene                              | ergy Efficiency Design                        |                           | 96% | Reduced chemical processing       |
| 1 Les                            | ss Hazardous Chemical Synthesis               | N/A                       |     |                                   |
| <b>⊞</b> Saf                     | fer Chemical Design                           | 21%                       |     | Used less hazardous raw materials |
| Saf                              | fer Solvents and Auxiliaries                  |                           | 96% | Replaced and reduced solvent use  |
| De:                              | sign for Degradation                          | N/A                       |     |                                   |
|                                  | nerently Safer Chemical for cident Prevention | N/A                       |     |                                   |

TOTAL PERCENT IMPROVEMENT



AGGREGATE SCORE 0= Most Desirable

Re-engineered Score ←

Previous Score &