

# 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.

## Diiodosilane (339873)

	12 Principles of Green Chemistry	Percentage of Improvement	Results
Resource Used	Atom Economy	56%	Increased yield. Used less raw materials
	Waste Prevention	100%	Eliminated solvent usage
	Reduce Derivatives	No Change	
	Renewable Feedstocks Use	56%	Decreased amount of raw materials
	Real-Time Pollution Prevention	N/A	
	Catalyst	No Change	
	Energy Efficiency Design	N/A	
Human & Environmental Hazards Reduction	Less Hazardous Chemical Synthesis	46%	Reduced hazardous reaction conditions
	Safer Chemical Design	40%	Minimizing the toxicity
	Safer Solvents and Auxiliaries	100%	Eliminated solvent usage
	Design for Degradation	N/A	
	Inherently Safer Chemical for Accident Prevention	26%	Reduced flammability and reactivity hazard

**TOTAL PERCENT IMPROVEMENT**

**67%**

**AGGREGATE SCORE**

0 = Most Desirable



Re-engineered Score ← 0

← Previous Score

The Life Science business of Merck operates as MilliporeSigma in the U.S. and Canada.

© 2024 Merck KGaA, Darmstadt, Germany and/or its affiliates. All Rights Reserved. Merck, the vibrant M and DOZN are trademarks of Merck KGaA, Darmstadt, Germany or its affiliates. All other trademarks are the property of their respective owners. Detailed information on trademarks is available via publicly accessible resources. 2024 - 58777

# 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.

## 2,3,4,5,6-Pentafluorobenzylphosphonic acid (737917)

	12 Principles of Green Chemistry	Percentage of Improvement	Results
Resource Used	Atom Economy	52%	Increased yield. Used less raw materials
	Waste Prevention	No Change	
	Reduce Derivatives	N/A	
	Renewable Feedstocks Use	52%	Decreased amount of raw materials
	Real-Time Pollution Prevention	N/A	
	Catalyst	No Change	
Human & Environmental Hazards Reduction	Energy Efficiency Design	25%	Reduced chemical processing
	Less Hazardous Chemical Synthesis	51%	Reduced hazardous reaction conditions
	Safer Chemical Design	No Change	
	Safer Solvents and Auxiliaries	52%	Reduced solvent usage
	Design for Degradation	N/A	
	Inherently Safer Chemical for Accident Prevention	51%	Reduced flammability and reactivity hazard

**TOTAL PERCENT IMPROVEMENT**

**44%**

**AGGREGATE SCORE**

0 = Most Desirable



Previous Score ←

Re-engineered Score ←

The Life Science business of Merck operates as MilliporeSigma in the U.S. and Canada.

© 2024 Merck KGaA, Darmstadt, Germany and/or its affiliates. All Rights Reserved. Merck, the vibrant M and DOZN are trademarks of Merck KGaA, Darmstadt, Germany or its affiliates. All other trademarks are the property of their respective owners. Detailed information on trademarks is available via publicly accessible resources. 2024 - 58777