



# 6PPD-Quinone

6PPD is an antioxidant and antiozonant and is used as an additive in rubber tires to help protect against degradation. While 6PPD does not appear to have significant toxicity, when it reacts with ozone it transforms into several byproducts, including 6PPD-quinone.

A recent study led by researchers at the University of Washington has determined that 6PPD-quinone is highly toxic to coho salmon, resulting in death when exposure to sufficiently high concentrations via stormwater runoff occurs.<sup>1</sup> Further work is ongoing to determine

how expansive the risk of 6PPD-quinone is to other species of salmon and other aquatic wildlife.

CIL initially developed a phenyl-<sup>13</sup>C<sub>6</sub>-labeled standard to provide sample-by-sample correction via surrogate. A ring-<sup>13</sup>C<sub>12</sub>-labeled option was subsequently developed, and most recently a phenyl-D<sub>5</sub> labeled standard was produced. These three labeling options provide a comprehensive set of standards for improved precision with quantitative analysis.

## Featured Products

Catalog No.	Description	Concentration	Amount
CLM-11290-1.2	6PPD-Quinone (ring- <sup>13</sup> C <sub>12</sub> , 99%) CP 95%	100 µg/mL in acetonitrile	1.2 mL
CLM-12293-1.2	6PPD-Quinone (phenyl- <sup>13</sup> C <sub>6</sub> , 99%)	100 µg/mL in acetonitrile	1.2 mL
<b>NEW!</b> DLM-11618-1.2	6PPD-Quinone (phenyl-D <sub>5</sub> , 98%)	100 µg/mL in acetonitrile	1.2 mL
ULM-12288-1.2	6PPD-Quinone (unlabeled) CP 95%	100 µg/mL in acetonitrile	1.2 mL

## Related Products

Catalog No.	Description	Concentration	Amount
DLM-4880-1.2	<i>N,N'</i> -Diphenyl- <i>p</i> -phenylenediamine (D <sub>14</sub> , 98%) CP 95%	100 µg/mL in nonane	1.2 mL
ULM-9465-1.2	<i>N,N'</i> -Diphenyl- <i>p</i> -phenylenediamine (unlabeled)	100 µg/mL in nonane	1.2 mL

## Reference

1. Tian, Z.; Zhao, H.; Peter, K.T.; et al. **2021**. A ubiquitous tire rubber-derived chemical induces acute mortality in coho salmon. *Science*, 371(6525), 185-189.

Additional labeled and unlabeled standards are available. Please visit us at **isotope.com**  
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