

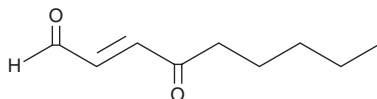
# PRODUCT INFORMATION



## 4-oxo-2-Nonenal

Item No. 10185

CAS Registry No.: 103560-62-9  
Formal Name: 4-oxo-2E-nonenal  
Synonym: 4-ONE  
MF:  $C_9H_{14}O_2$   
FW: 154.2  
Purity:  $\geq 98\%$   
Supplied as: A solution in methyl acetate  
Storage:  $-80^\circ C$   
Stability:  $\geq 1$  year



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

4-oxo-2-Nonenal is supplied as a solution in methyl acetate. To change the solvent, simply evaporate the methyl acetate under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as ethanol, DMSO, and dimethyl formamide purged with an inert gas can be used. The solubility of 4-oxo-2-nonenal in these solvents is approximately 50 mg/ml.

4-oxo-2-Nonenal is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, the methyl acetate solution of 4-oxo-2-nonenal should be diluted with the aqueous buffer of choice. The solubility of 4-oxo-2-nonenal in PBS (pH 7.2) is approximately 0.5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

4-hydroxy Nonenal is a lipid peroxidation product derived from oxidized  $\omega$ -6 polyunsaturated fatty acids such as arachidonic acid and linoleic acid.<sup>1,2</sup> It exhibits various biological activities such as cytotoxicity, growth inhibiting activity, genotoxicity, and chemotactic activity and has been widely used as a marker of lipid peroxidation.<sup>1-3</sup> 4-oxo-2-Nonenal is a more recently identified product of lipid peroxidation.<sup>4-6</sup> It actively modifies histidine and lysine residues on proteins and causes protein cross-linking.<sup>7,8</sup> 4-oxo-2-Nonenal also modifies 2'-deoxyguanosine, further implicating lipid peroxidation in mutagenesis and carcinogenesis.<sup>4</sup>

### References

1. Pryor, W.A. and Porter, N.A. *Free Radic. Biol. Med.* **8(6)**, 541-543 (1990).
2. Esterbauer, H., Schaur, R.J., and Zollner, H. *Free Radic. Biol. Med.* **11(1)**, 81-128 (1991).
3. Sodum, R.S. and Chung, F.-L. *Cancer Res.* **48(2)**, 320-323 (1988).
4. Rindgen, D., Nakajima, M., Wehrli, S., et al. *Chem. Res. Toxicol.* **12(12)**, 1195-1204 (1999).
5. Lee, S.H. and Blair, I.A. *Chem. Res. Toxicol.* **13(8)**, 698-702 (2000).
6. Spittler, P., Kern, W., Reiner, J., et al. *Biochim. Biophys. Acta* **1531(3)**, 188-208 (2001).
7. Liu, Z., Minkler, P.E., and Sayre, L.M. *Chem. Res. Toxicol.* **16(7)**, 901-911 (2003).
8. Zhang, W.-H., Liu, J., Xu, G., et al. *Chem. Res. Toxicol.* **16(4)**, 512-523 (2003).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 10/10/2023

#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897  
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM