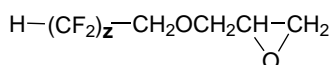
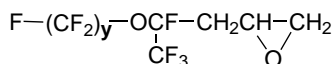
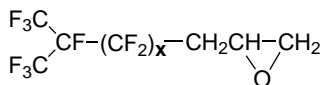
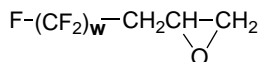


## Fluoroepoxides: Versatile Functional Monomers

**NEW!**



Carbon-fluorine bonds have greater bond strengths than carbon-hydrogen or carbon-carbon bonds. Fluorocarbon polymers (FCPs) are, therefore, extremely resistant to attack by free radicals involved in oxidative degradation and to thermo-oxidative degradation. They also have excellent resistance to chemicals and solvents. These desirable properties have been exploited in existing as well as novel applications of FCPs in the traditional construction and automobile industries as well as in new growth biomedical and communications markets.<sup>1</sup>

When designing new generations of fluorocarbon polymers having unique combinations of electrical and optical properties, thermal stability, and chemical resistance, as well as ease of processability, consider our new fluoroepoxides. Fluoroalkyloxiranes and fluoroalkyl glycidyl ethers serve as important intermediates in the synthesis of surfactants, oligomers, and polymers with unique properties.<sup>2</sup> Some examples from the recent literature are provided here:

- Employed recently in the polymerization of morpholino perfluoroacrylates with hydrophobic and hydrophilic chains that lend interesting characteristics to textile-finishing products.<sup>3</sup>
- Used to prepare fluoroalkyl- $\alpha$ -hydroxy acids by  $\text{HNO}_3$  ring-opening oxidative reaction, followed by conversion to the corresponding methyl ester, useful in the synthesis of fluoroalkylated heterocycles.<sup>4</sup>
- Transformed into diols via dioxolane intermediates; their conversion to dimethacrylates was accomplished regioselectively.<sup>5</sup>

Browse through the **Aldrich Fluorinated Products Catalog** for a wide selection of over 1,700 fluorinated compounds. For our complete product offering, view or search our product database on the Web at [www.sigma-aldrich.com](http://www.sigma-aldrich.com). If you have questions or comments, please contact our **Technical Services Department** at (800) 231-8327 (USA) or your local office, or e-mail us at [aldrich@sial.com](mailto:aldrich@sial.com). Also, we welcome your new product suggestions.

### Fluoroalkyl Oxiranes

w = 3	<a href="#">49,632-4</a>	(2,2,3,3,4,4,4-Heptafluorobutyl)oxirane, 96%	1g
w = 4	<a href="#">47,405-3</a>	(2,2,3,3,4,4,5,5,5-Nonafluoropentyl)oxirane, 95%	5g
w = 6	<a href="#">47,406-1</a>	(2,2,3,3,4,4,5,5,6,6,7,7,7-Tridecafluoroheptyl)oxirane, 97%	5g
w = 8	<a href="#">47,408-8</a>	(2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,9-Heptadecafluorononyl)oxirane, 96%	5mL ; 25mL
w = 10	<a href="#">47,409-6</a>	(2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,11-Heneicosafluoroundecyl)oxirane, 96%	5g
x = 0	<a href="#">49,629-4</a>	[2,3,3,3-Tetrafluoro-2-(trifluoromethyl)propyl]oxirane, 97%	1g
x = 2	<a href="#">47,411-8</a>	[2,2,3,3,4,5,5,5-Octafluoro-4-(trifluoromethyl)pentyl]oxirane, 97%	5g
x = 4	<a href="#">47,412-6</a>	[2,2,3,3,4,4,5,5,6,6,7,7,7-Dodecafluoro-6-(trifluoromethyl)heptyl]oxirane, 96%	5mL; 25mL
x = 6	<a href="#">47,413-4</a>	[2,2,3,3,4,4,5,5,6,6,7,7,8,9,9,9-Hexadecafluoro-8-(trifluoromethyl)nonyl]oxirane, 96%	5mL; 25mL
x = 8	<a href="#">47,414-2</a>	[2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,11,11,11-Eicosafluoro-10-(trifluoromethyl)undecyl]oxirane, 96%	5g; 25g
y = 1	<a href="#">49,630-8</a>	[2,3,3,3-Tetrafluoro-2-(trifluoromethoxy)propyl]oxirane, 97%	1g
y = 3	<a href="#">49,631-6</a>	[2,3,3,3-Tetrafluoro-2-(heptafluoropropoxy)propyl]oxirane, 96%	1g

### Fluoroalkyl Glycidyl Ethers

z = 2	<a href="#">47,415-0</a>	Glycidyl 2,2,3,3-tetrafluoropropyl ether, 97%	5mL; 25mL
z = 4	<a href="#">47,416-9</a>	Glycidyl 2,2,3,3,4,4,5,5-octafluoropentyl ether, 96%	5mL; 25mL
z = 6	<a href="#">47,417-7</a>	Glycidyl 2,2,3,3,4,4,5,5,6,6,7,7-dodecafluoroheptyl ether, 97%	5mL; 25mL
z = 8	<a href="#">47,418-5</a>	Glycidyl 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9-hexadecafluorononyl ether, 96%	5mL; 25mL

**References:** (1) CMR Focus Report, April 27, 1998, p 21. (2) Feiring, A.; Smart, B. *Ullmann's Encyclopedia of Industrial Chemistry*, 5<sup>th</sup> ed.; VCH Publishers: New York, 1988; Vol. A11, Chapter 6. (3) Guyot, B. et al. *J. Fluorine Chem.* **1995**, *74*, 233. (4) Ould Amanetoullah, A. et al. *ibid.* **1997**, *84*, 149. (5) Cirkva, V. et al. *ibid.* **1997**, *84*, 53.

