

F1EC Monofluoroethylene Carbonate

Properties

Chemical Name:
Monofluoroethylene carbonate,
4-Fluoro-1,3-dioxolane-2-one

Formula: $C_3H_3FO_3$

Molecular weight: 106.05

Appearance: colourless solid

Density (20°C): 1.5 g/cm³

Boiling point: 212°C

Melting point: 22°C

Flash point: 125°C

Specification

Purity: $\geq 99.9\%$ wt.

Water: ≤ 20 ppm

HF: ≤ 20 ppm

Colour: ≤ 30 APHA

Shelf Life: 6 months

Applications

Batteries and Accumulators

Monofluoroethylene carbonate is applied for the use in batteries and accumulators.

It improves the cycle life of lithium ion rechargeable cells containing a graphitic anode.

It forms an elastic surface film on the electrode.^{[1][2]}

"It has been expected as an attractive additive or solvent for lithium ion secondary battery because of reducing the electrolyte decomposition and substantially increasing the cell efficiency."^[3]

Classifications and Labelling

CAS-No.: 114435-02-8

Caution: substance not yet fully tested

Xn: R22-36/38-68

Packaging

30l, 60l and 200l drums, PE-lined.

Availability

On request.

Handling

F1EC is a flammable solid at 20 °C. It hydrolyses slowly in contact with water.

- [1] R. McMillan, H. Slegel, Z.X. Shu, W. Wang, *J. Power Sources* 81 (1999) 20-26
- [2] R. Mogi, M. Inaba, S.K. Jeong, Y. Iriyama, T. Abe, Z. Ogumi, *J. Electrochem. Soc.* 149 (12) (2002) A1578-A1583
- [3] M. Kobayashi, T. Inoguchi, T. Iida, T. Tanioka, H. Kumase, Y. Fukai, *J. Fluorine Chem.* 120 (2003) 105-110

MANAGEMENTSYSTEM



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