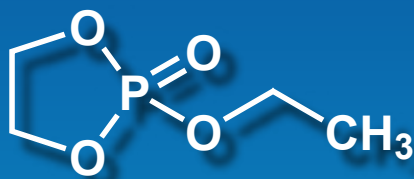


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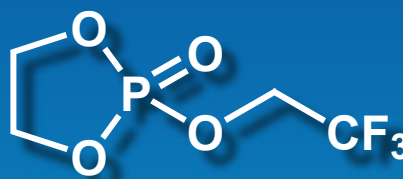
MATERIALS



# Flame-retardant and Overcharge Protection Electrolyte Additives for Lithium-ion Battery



**2-Ethoxy-2-oxo-1,3,2-dioxaphospholane**  
1g / 5g  
[E1458]



**TFEP**  
1g / 5g  
[E1456]

## Advantages

- Cyclic phosphate esters with flame retardance
- Prevent sharp voltage rise and protect against overcharging
- Contribute to improved coulomb efficiency and cycle stability due to the SEI and CEI formations

## References

- Ethylene ethyl phosphate as a multifunctional electrolyte additive for lithium-ion batteries  
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<https://doi.org/10.1039/C4RA15899G>
- Functionality Selection Principle for High Voltage Lithium-ion Battery Electrolyte Additives  
C. Su, Z. Zhang, *et al.*, *ACS Appl. Mater. Interfaces* **2017**, *9*, 30686.  
<https://doi.org/10.1021/acsami.7b08953>
- A cyclic phosphate-based battery electrolyte for high voltage and safe operation  
Q. Zheng, Y. Yamada, R. Shang, S. Ko, Y. Lee, K. Kim, E. Nakamura, A. Yamada, *Nat. Energy* **2020**, *5*, 291.  
<https://doi.org/10.1038/s41560-020-0567-z>

## Related Product

**Phosphate-type Electrolyte Additive for Lithium-ion Battery**  
**TTFPa (= Tris(2,2,2-trifluoroethyl) Phosphate**

5g / 25g [T3203]

For further information please refer to our website at [www.TCIchemicals.com](http://www.TCIchemicals.com).

TCI battery materials



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