# Article information:

Preparation of a halogen-free flame retardant and its effect on the poly(L-lactic acid) as the flame retardant material - ScienceDirect  
<https://www.sciencedirect.com.remotexs.ntu.edu.sg/science/article/pii/S0032386121006509>

# Article summary:

1. A novel flame retardant (POCODA) was synthesized using phosphorus oxychloride (POC) and 4,4′-diaminodiphenyl ether (ODA).

2. The POCODA/APP as a synergistic flame retardant was incorporated into the poly(L-lactic acid) (PLA) to investigate effects of this synergistic FR on the thermal stability, combustion behavior and flame retardancy on the PLA.

3. The POCODA and POCODA/APP exhibited self-extinguishing effect on the PLA in the UL-94 test, and enhanced significantly the crystallizability of PLA.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article “Preparation of a halogen-free flame retardant and its effect on the poly(L-lactic acid) as the flame retardant material” is an informative piece that provides an overview of a novel halogen-free flame retardant (POCODA), its synthesis route, and its effects on poly(L-lactic acid). The article is well written with clear explanations of each step in the process, as well as detailed descriptions of each experiment conducted to assess the efficacy of POCODA as a flame retardant for PLA.

The article is generally reliable in terms of its content; however, there are some potential biases that should be noted. For example, while it does mention some potential risks associated with using halogenated flame retardants, it does not provide any information about possible risks associated with using non-halogenated ones such as POCODA. Additionally, while it does discuss some potential benefits associated with using POCODA as a flame retardant for PLA, it does not explore any counterarguments or alternative solutions that could be used instead. Furthermore, while it mentions that other strategies have been proposed to enhance the flame retardancy of PLA by physical melt blending with different flame retardants, it does not provide any details about these strategies or how they compare to POCODA in terms of efficacy or safety.

In conclusion, this article provides an informative overview of a novel halogen-free flame retardant (POCODA), its synthesis route, and its effects on poly(L-lactic acid). While generally reliable in terms of content, there are some potential biases that should be noted such as lack of discussion about possible risks associated with

# Topics for further research:

* Halogen-free flame retardant safety
* Alternatives to halogenated flame retardants
* Flame retardancy of PLA
* Physical melt blending flame retardants
* Comparison of flame retardants for PLA
* Risks of halogenated flame retardants

# Report location:

<https://www.fullpicture.app/item/3773ce88eacd834c6e231ea6979c97e6>