# Article information:

Coatings protecting against aviation piston engine seizure - ScienceDirect
<https://www.sciencedirect.com/science/article/abs/pii/S0043164823000108>

# Article summary:

1. The article presents the basics of manufacturing porous (16%) composite coatings based on phenolic resin reinforced with glassy carbon particles (30 wt%).

2. These coatings, when applied to a steel push rod surface, can prevent seizure of the contact in conditions of lubrication failure up to 10 hours.

3. The test results of the developed composite porous coatings were compared with the results of non-porous commercial coatings and showed improved wear resistance.

# 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 is generally reliable and trustworthy, as it provides detailed information about the development and testing of a new type of coating for aircraft piston engines that can protect against seizure in conditions of lubrication failure. The authors provide evidence for their claims by citing relevant research studies and providing laboratory test results from both tribological testers and engine test benches. Furthermore, they provide equations to describe the dependencies between various factors such as glassy carbon content, thinner viscosity, and sandblasting pressure which allows readers to determine optimal conditions for producing these coatings.

However, there are some potential biases in the article that should be noted. For example, while the authors do mention some alternative solutions such as using membrane accumulators or modern lubrication systems with minimum-quantity lubrication, they focus primarily on their own solution without exploring other options in detail or considering any potential drawbacks or risks associated with their proposed solution. Additionally, while they do compare their developed coating to non-porous commercial coatings, they do not explore any other possible alternatives or counterarguments that could be made against their proposed solution.

In conclusion, this article is generally reliable and trustworthy but does have some potential biases that should be taken into consideration when evaluating its contents.

# Topics for further research:

* Aircraft piston engine lubrication failure
* Alternative solutions for aircraft piston engine seizure
* Tribological testing of coatings
* Engine test bench results
* Glassy carbon content and viscosity
* Sandblasting pressure and coating performance

# Report location:

<https://www.fullpicture.app/item/411c31e116832e51c2ba485269ebab6f>