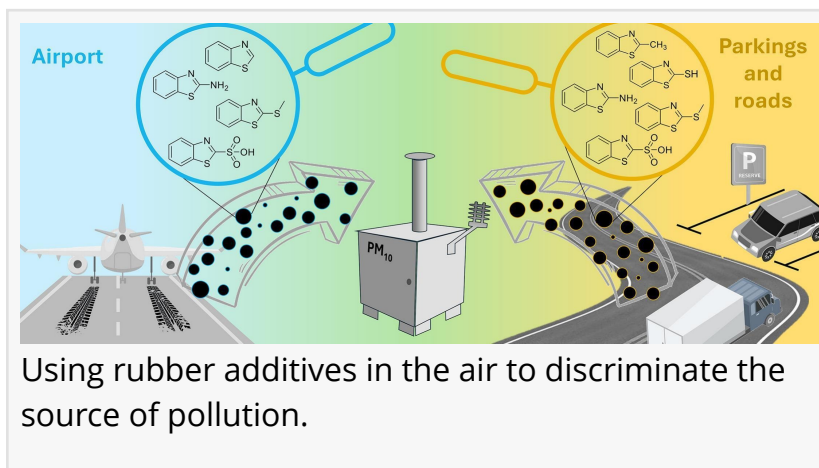


# Landing into the source: first insights into the hidden contamination of airports

GA, UNITED STATES, December 12, 2025 /EINPresswire.com/ -- For the first time, researchers have analyzed outdoor PM10 from Milano Linate Airport and determined concentrations of Benzothiazoles (BTHs), tire-related additives. Not only concentrations were much higher than that of highly trafficked cities, but specific additives were proven to derive mostly from the airport area. Two of them were strongly correlated, suggesting a close link to the airport activities. The ecotoxicological assessment showed a low potential risk of occupational exposure to BTHs at Linate Airport.



The aviation sector plays a key role in worldwide connections, yet alongside its benefits, airports generate forms of pollution, beyond exhaust gas emissions, that are often underestimated and go unnoticed: non-exhaust emissions, such as [tire wear particles](#) (TWPs). Produced during the high-speed, high-friction events, TWPs are rubber particles that can easily enter the air, contributing to the atmospheric Particulate Matter (PM), and affect its quality by also carrying rubber chemical additives into the environment.

"Although TWPs can derive from all tire-equipped vehicles, they might pose a higher risk at airports considering the large amount produced especially during the landings and the take offs," said Prof Andrea Gambaro, senior author of a new study published in Environmental Chemistry and Ecotoxicology. "So far, airport non-exhaust emissions are still poorly studied, leaving a huge knowledge gap."

The researchers, from an international and multidisciplinary context, investigated the chemical composition of atmospheric PM10 of Milano Linate Airport, with a focus on eight rubber tire-related chemical markers (Benzothiazoles, BTHs) and other twenty-three chemical species, aiming to find tracers specifically linked to airport activities.

The team discovered that BTHs' concentrations determined in outdoor airport PM10 was much

higher than in other trafficked Italian cities such as Milano and Collegno (Torino), pointing out the significant input of these chemicals into the environment due to airport activities.

Additional insights were discovered when considering the location and the surroundings of the sampling spot. Indeed, the PM10 was sampled in an area influenced by two main sources of Benzothiazoles: roads and parking on the right-side, and airport activities on the left side.

"By cross-referencing our results with wind direction data, we managed to discriminate the contribution of the two sources" explained lead author Dr. Giovanna Mazzi. "This way, we discovered that the airport emits especially four benzothiazoles, two of which demonstrated a strong correlation among each other." Notably, the same compounds did not show this behaviour in airborne urban PM10 sampled in other cities of Northern Italy, highlighting that they might be linked to the airport activities.

An ecotoxicological assessment was also carried, which highlighted a low potential risk of occupational exposure to BTHs in outdoor air at Linate airport.

"Although further research is still needed, these findings represent a key step toward identifying specific chemical markers for tracing airport non-exhaust emissions into the air," Mazzi added.

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Lucy Wang

BioDesign Research

[email us here](#)

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