

Substance Information Document

Homogenized Tobacco

1. Substance identity

Name	Homogenized Tobacco
Synonyms	Reconstituted tobacco Cast leaf
IUPAC Name	N/A
CAS	N/A

N/A, not available

Homogenized tobacco (also known as reconstituted tobacco or cast leaf) is produced by finely grinding tobacco dust, stems, and other by-products, often mixing them with a binding agent. This mixture is then cast, extruded, or rolled into flat sheets of uniform thickness and quality. These sheets can be cut into various sizes and used as filler or wrapper in tobacco products.

The two main processes for making homogenized tobacco sheets are the tobacco slurry process (Cast Leaf) and the paper process.

Homogenized tobacco allows for the utilization of tobacco by-products, improving manufacturing efficiency and consistency in product quality. It is commonly used in cigarettes and other tobacco products as part of the blend or as a wrapper.

2. Toxicological information

The reconstitution process can alter the chemical composition of the tobacco sheet compared to the original leaf, potentially resulting in the loss of some natural constituents. However, homogenized tobacco still contains the chemicals inherent to tobacco. Homogenized tobacco, like all tobacco products, contains nicotine, tobacco-specific nitrosamines (TSNAs), polycyclic aromatic hydrocarbons (PAHs), heavy metals, and other toxicants.

There is a lack of substance-specific toxicological data for homogenized tobacco regarding acute toxicity, irritation, sensitization, repeat dose toxicity, genetic toxicity, carcinogenicity, developmental/reproductive toxicity, and cardiopulmonary toxicity. In such cases, hazard identification relies on the known hazards of tobacco and its constituents detected when burned or heated.

For burned tobacco, *The Chemical Components of Tobacco and Tobacco Smoke* (Rodgman and Perfetti, 2008) is a comprehensive reference detailing the chemistry of tobacco and cigarette smoke. It catalogs nearly 9,600 identified compounds, organized by chemical classes, and reviews their isolation, analytical methods, biological activity, and toxicological significance.

When homogenized tobacco is heated, the resulting aerosol contains harmful and potentially harmful constituents (HPHCs). Studies have shown that aerosols from heated tobacco products made using the slurry process (Cast Leaf) do not introduce new constituents compared to conventional cigarette smoke when heated under Tobacco Heating System (THS) conditions (Bentley et al., 2020), (Lang et al., 2024). Moreover, chemical analysis indicates that THS aerosols contain substantially lower levels of HPHCs than cigarette smoke, with average reductions above 90% (Schaller et al., 2016), (Gunduz et al., 2025). Nicotine levels are also lower. While some thermal degradation byproducts (e.g., glycidol, 3-MCPD, 2-furanmethanol, furfural) are slightly higher, they remain below levels considered critical for harm reduction (Gunduz et al., 2025), (Bentley et al., 2020). Toxicological studies consistently report that THS aerosols exhibit significantly reduced *in vitro* cytotoxicity, genotoxicity, and mutagenicity compared to cigarette smoke (Schaller et al., 2016), (Gunduz et al., 2025).

3. Addictiveness

There is no substance-specific information on the addictiveness of homogenized tobacco, but it contains nicotine, which is addictive. Moreover, based on the PubMed search (“homogenized tobacco”[tiab] AND addiction), substance-specific information related to addictiveness is not available.

4. References

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