

## Decorative "cake design" dust is not always edible

More and more individuals are taking up "cake design", a practice that consists in decorating cakes as if they were works of art, with *trompe l'œil* patterns, shimmering colours, etc. Products from specialised shops or the Internet can be purchased to add a "metallic" visual touch to these cakes or the stands on which they are displayed. Sold as gold, silver or copper "lustre" dust or powder, these metallic colourings need to be diluted and then applied with a brush or spray gun. However, this metallic dust can be unsafe.

### An alert issued by poison control centres in France

In 2021, French poison control centres reported three cases of accidental inhalation of this decorative dust [1]. Two women inhaled a large amount of gold metallic dust while preparing a cake, after opening the bottle. They quickly developed a cough, difficulty breathing and fever, which was short-lived and had a favourable outcome. The third case involved a healthy child under three years of age, who inhaled gold metallic dust poured into a glass by his mother. This young boy also rapidly developed a cough, polypnoea<sup>1</sup> and fever. He was taken to the hospital emergency department, where biological tests revealed a pulmonary inflammatory syndrome, which resolved within 48 hours.

All three cases involved the same product, a decorative gold dust.

Composition data on the dust obtained by poison control centres showed the presence of 30% zinc and 70% copper, in the form of very fine particles that are able to penetrate deep into the lungs. Inhalation of these metal particles, especially zinc oxides, caused a syndrome similar to "metal fume fever", a manifestation that has been described in welding and metal assembly workplaces.

### Confusing labelling for consumers

The packaging for this gold dust stated that it was "non-toxic", wrongly suggesting that there was no risk.



However, these three cases prove that accidental inhalation of this metallic dust can cause adverse effects. The packaging also stated that the product was "non-edible". Nevertheless, other types of metallic dust available on the market are in fact edible. The similarity of the packaging and the barely visible information on whether this decorative dust is edible or inedible could lead to confusion among consumers.

This confusion may lead to inedible decorative dust being used on cakes and a risk of ingesting non-food-grade metallic colourings. This was demonstrated in 2021 by the Centers for Disease Control and Prevention<sup>2</sup> in the United States, which revealed cases of heavy metal poisoning in children having eaten cakes decorated with this type of inedible metallic dust.

They identified copper poisoning in children aged 1–11 years with high biological concentrations of barium, chromium and lead, and lead poisoning in a one-year-old child related to the use of a dust containing 250 g/kg lead [2].

The US Food and Drug Administration<sup>2</sup> also issued a warning in 2021 about possible confusion between edible and non-edible decorative metallic dust, and about the risk of metal poisoning [3].

1. Increased respiratory rate associated with a decrease in the volume of air inhaled and exhaled.
2. US public health agencies that analyse and manage health alerts.

### What the regulations say

If a decorative dust is designed to be applied to cakes, then it must be edible and comply with the European regulations governing assessment of the efficacy and safety of food additives, and their authorisation (Regulations (EC) No 1331/2008<sup>3</sup> and (EC) No 1333/2008<sup>4</sup>).

If it is only intended for colouring inedible decorative items, then it is not a food additive, but it can be brought into contact with food and in this case, it must comply with the European regulation on food contact materials (Regulation (EC) No 1935/2004<sup>5</sup>).

Considered as a coating applied to a cake stand or to decorative elements placed on cake, the dust must not leach any substances that could present a hazard to human health into the food.

### Be careful when buying... and using this dust!

ANSES therefore called for vigilance before the year-end celebrations by warning of this risk of confusion [4]. When purchasing or using decorative dust, check whether it is edible before applying it to a cake or cake stand. Moreover, whether or not it is edible, this dust is very fine and light, and easily dispersed in the air, so it should be used in a well-ventilated room and kept out of the reach of children.

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### References

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3.<https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32008R1331>

4.<https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX:32008R1333>

5.<https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex%3A32004R1935>