

THE HINDU

Fact check: No, potassium ferrocyanide in some salt brands is not at toxic levels

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Citing a report from U.S.-based West American Analytical Laboratories, Shiv Shankar Gupta, chairman of Godhum Grains and Food Products, accused some salt manufacturers in India of selling food-grade salt that contained high levels of potassium ferrocyanide. This caused a panic, which was aggravated by widespread sharing of the news item on social media.

Indeed, potassium ferrocyanide is being used in salt to give it anti-caking properties. But the answer to whether it is toxic is no!

Firstly, while potassium cyanide is a toxic substance and releases the cyanide anion when consumed by a person, potassium ferrocyanide is not. In potassium ferrocyanide, the cyanide anion is strongly bonded to ferrous ion and hence does not get hydrolysed.



An image widely shared in social media.

Secondly, there is the factor known as the LD50 value. This is expanded as “Lethal Dose 50%”. LD50 is the amount of any chemical that can cause death in 50% of the group of animals that it enters by consumption or absorption through the skin.

According to inorganic chemist Dr. Sayam Sengupta of IISER Kolkata, the LD50 value for common salt — sodium chloride — for rats is greater than 3 gram per kilogram body weight of the animal. He points out that for potassium Ferrocyanide, LD 50 value is 3.6 gram per kilogram weight of the animal, when taken orally.

As this indicates, the LD50 value of potassium ferrocyanide is almost the same as common salt.

Thirdly, the Food Safety and Standards Authority of India (FSSAI) has prescribed the levels of potassium ferrocyanide that can be used in salt. As Dr Arvind Kumar, Principal Scientist with the Central Salt and Marine **Chemicals** Research Institute of the CSIR, clarifies, the allowed levels of potassium ferrocyanide in salt is 10 mg/kg. whereas the level in the Tata salt was found to be 1.90 mg/kg and that of Sambhar salt was found to be about 4.71 mg/kg, both within allowed levels.

Some countries such as the European Union have banned the use of potassium ferrocyanide as anti-caking agent. However, the analysis indicates that there is no reason to fear toxicity due to this chemical being used.