



Press Note

Toxic chemical “Nonylphenol” found in drinking water can pose health hazards

New Delhi, June 28, 2022:A new study by Toxics Link, released today, titled ‘**Toxic Chemical “Nonylphenol”: A Barrier to Safe Drinking Water**’ has raised concerns over high levels i.e., 29.1 to 80.5 ppb (parts per billion) of ‘Nonylphenol’, a toxic chemical detected in drinking water samples across India. In this study, fifteen drinking water samples were collected from different parts of the country and sent to the Shriram Institute of Industrial Research, New Delhi for testing. The highest concentration was observed in a borewell water sample from Bathinda (80.5 ppb). “Nonylphenol is a toxic chemical and a well-known endocrine disruptor associated with a number of adverse effects on human health. Daily intake of Nonylphenol through drinking water can have adverse health impacts on citizens”, said **Piyush Mohapatra, Senior Programme Coordinator, Toxics Link**. Several research studies have confirmed that Nonylphenol can disrupt the endocrine system of human beings and also impact aquatic life and wildlife. The United Nations Environment Programme has also designated Nonylphenol as a chemical of global concern.

Nonylphenol is commonly used in the production of Nonylphenol Ethoxylates (NPEs). NPEs are used as surfactants as well as in day-to-day consumer products such as detergents, wetting agents and dispersants, etc. NPEs enter the environment and ultimately break down to Nonylphenols that can enter different environmental matrices such as water, soil, etc. The chemical can also possibly be released during industrial cleaning processes and from wastewater produced during production of NPEs. The 2019 study by Toxics Link confirmed the presence of Nonylphenol in detergents sold in the Indian market with the highest concentration found to be 11.92% wt. Moreover, it was also detected in notably high quantity in all the river and lake samples tested in that particular study.

In India, the Bureau of Indian Standards (BIS) has set standards for phenolic compounds in drinking water (1 ppb) and surface water (5 parts per million

(ppm)). However, at present, there are no standards exclusively for nonylphenols in drinking and surface waters in India. Moreover, no regulations are in place in India to restrict or phase out the use of NPEs in detergents and other consumer products in order to prevent the release of Nonylphenol into the environment, especially water bodies.

“Countries like the USA, European Union, Japan, and China have already acknowledged the dangers of this chemical and have come up with regulations to phase out the use of this chemical in many of the products including detergents for minimizing the risks at the downstream level”, said **Dr. Omkar Gaonkar, Programme Coordinator, and Toxics Link**. He further stated that “These countries have also established water quality criteria and standards for Nonylphenol.”

In the present report, fifteen water samples were collected from different parts of India as follows:

1. Samples of tap water from Twelve locations from **Ghaziabad (Uttar Pradesh) Indraprastha (New Delhi); Balbeer Vihar (Northwest Delhi); Annur Block and Project Phase 1 of Coimbatore Municipal Corporation(Tamil Nadu); Bapi village in Dausa rural (Rajasthan); Dausa City, (Rajasthan); Navi Mumbai (Maharashtra); Gurugram (Haryana); Bathinda (Punjab); KIIT University and Damana slum in Bhubaneswar (Odisha)**
2. Three drinking water samples from **Ghaziabad (Uttar Pradesh); Sancoale, (South Goa); and Bhatinda (Punjab)**

The water samples were collected and sent to **Shriram Institute of Industrial Research, New Delhi** for analysis of nonylphenols

“Presence of Nonylphenol, a toxic chemical, in drinking water is of serious concern to human health and will require thorough investigation and creation of suitable standards for nonylphenol in drinking water. This measure will go a long way in ensuring water quality and availability of safe drinking water to citizens,” said **Mr. Satish Sinha, Associate Director, Toxics Link**.

Key findings of the study:

Nonylphenol was found in all the samples with concentrations ranging from 29.1 to 80.5 ppb

Highest concentration was observed in the tap water from a borewell in Bathinda (80.5 ppb), while the lowest concentration was found in the tap water from government supply water in Indraprastha, New Delhi (29.1 ppb)

Nonylphenol concentrations in the drinking water samples ranged from 58.8–61.5 ppb. Out of three drinking water samples, two samples were filtered (61.5 ppb in Ghaziabad, Uttar Pradesh and 58.8 ppb in Sancoale, South Goa) and one sample was RO-treated (61.1 ppb in Bhatinda, Punjab) Nonylphenol concentrations in water samples were 29 to 81 times higher than the prescribed BIS limit for phenolic compounds in drinking water (1 ppb). These values are even higher compared to the US EPA safety standard for freshwater quality criteria

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