

2,2,4-trimethyl-1,3-pentanediol-diisobutyrate (TPIB)

The chemical 2,2,4-trimethyl-1,3-pentanediol-diisobutyrate (TPIB) was found in drinking water samples collected on 8/27/24 from multiple locations. This chemical is used in polymers to make them softer and more flexible. This makes it useful in vinyl in clothing, toys, and containers. It is also used in varnishes, inks, resins, coatings, and latex paint.

TBIP is a clear, colorless liquid with a musty odor. It evaporates very slowly and is slightly soluble in water. In studies of its toxicity, TBIP has generally low toxicity. In high enough concentration it can cause skin irritation. Its oral toxicity is low. One study of rats fed TPIB for 90 days found some signs of increased liver weight with the highest dose. A similar study on dogs also found increased liver weight. In both studies the animals behaved normally and were eating normally. In a follow-up study, once the chemical was removed from the diet, the rats' livers returned to their normal weight. A study on rats looking at whether TPIB could cause birth defects did not find any problems with the rat pups.

When we eat a chemical, our liver acts to break down the chemical. The increases in liver size seen in these animal studies were likely due to the high doses used, so the liver grew larger to help break down the chemical better. People are not likely to be exposed to such high doses in the environment.

Isovanillin

Isovanillin was detected water samples collected 8/27/24 from multiple locations. Isovanillin is naturally occurring in plants and has pharmacological properties including antidiarrheal and antispasmodic activity. Pure isovanillin is a skin and eye irritant. It is characterized as having a fragrant odor. There is limited information regarding the acute and chronic toxicity of isovanillin. VDH is still gathering information to determine if this chemical may impact health if consumed for a brief period at low concentrations.