

Emissions into water

TOC emissions

Roche records organic emissions into water as total organic carbon (TOC) after treatment in a wastewater treatment plant. At above 90%, the elimination rates in Roche's wastewater treatment plants are very high.

228 metric tons of TOC were discharged into surface waters in 2011. The elimination rates of waste water treatment plants used but not run by Roche were reconfirmed during the year thus providing more accurate information on the amount of TOC actually released into the environment.

Roche's ongoing efforts to reduce environmental impact as part of its sustainable development program are reflected in the 97.5% reduction in TOC emissions in metric tons per CHF 1 million of sales since 1992.

Heavy metals emissions

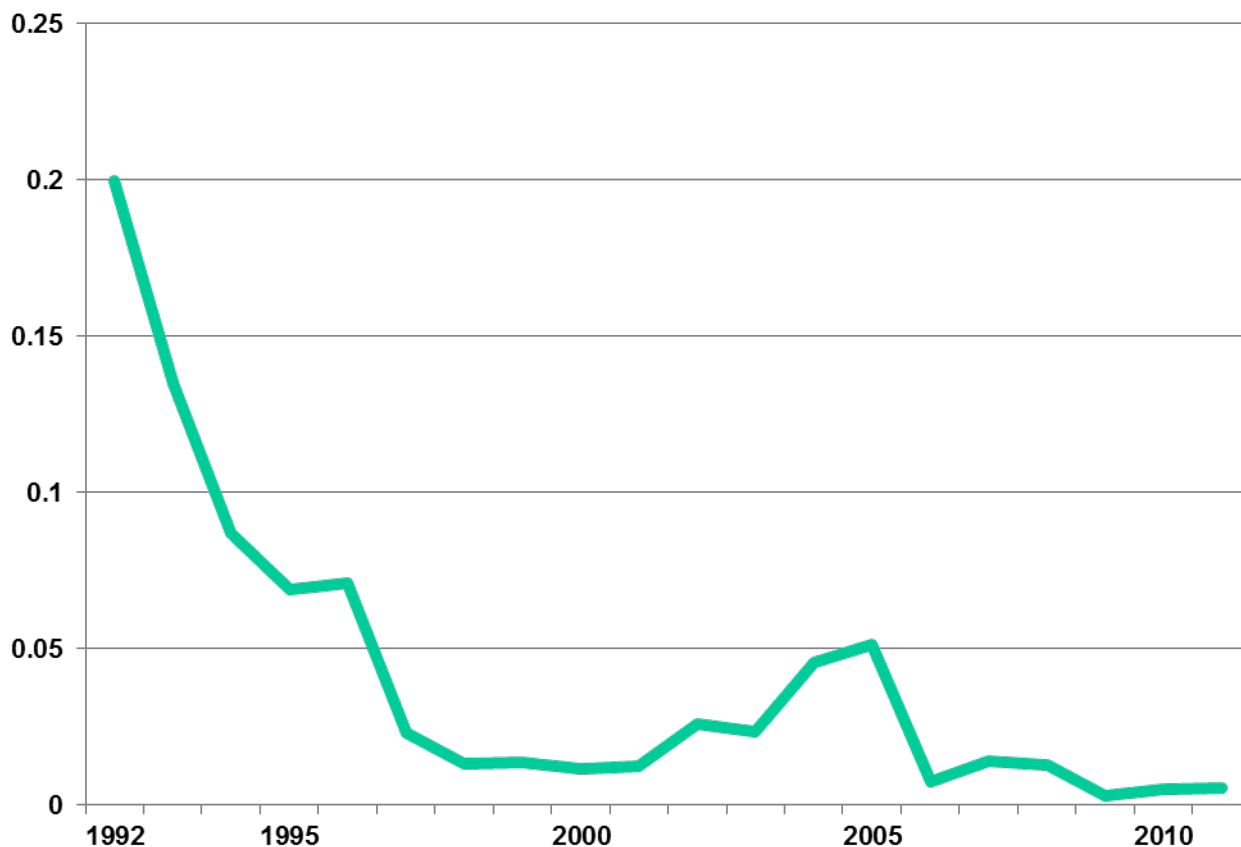
Heavy metal compounds in wastewater are not biodegradable and, depending on their concentration, are harmful to animals and plants in natural waters. They can accumulate in the food chain or be deposited in sediments.

Roche Group emissions fluctuate around a very low level. The total load consists of metals (zinc, copper, chromium) leached out of piping by wastewater and emitted in this way.

Roche does not, however, discharge any toxicologically significant metals such as cadmium or mercury into wastewater.

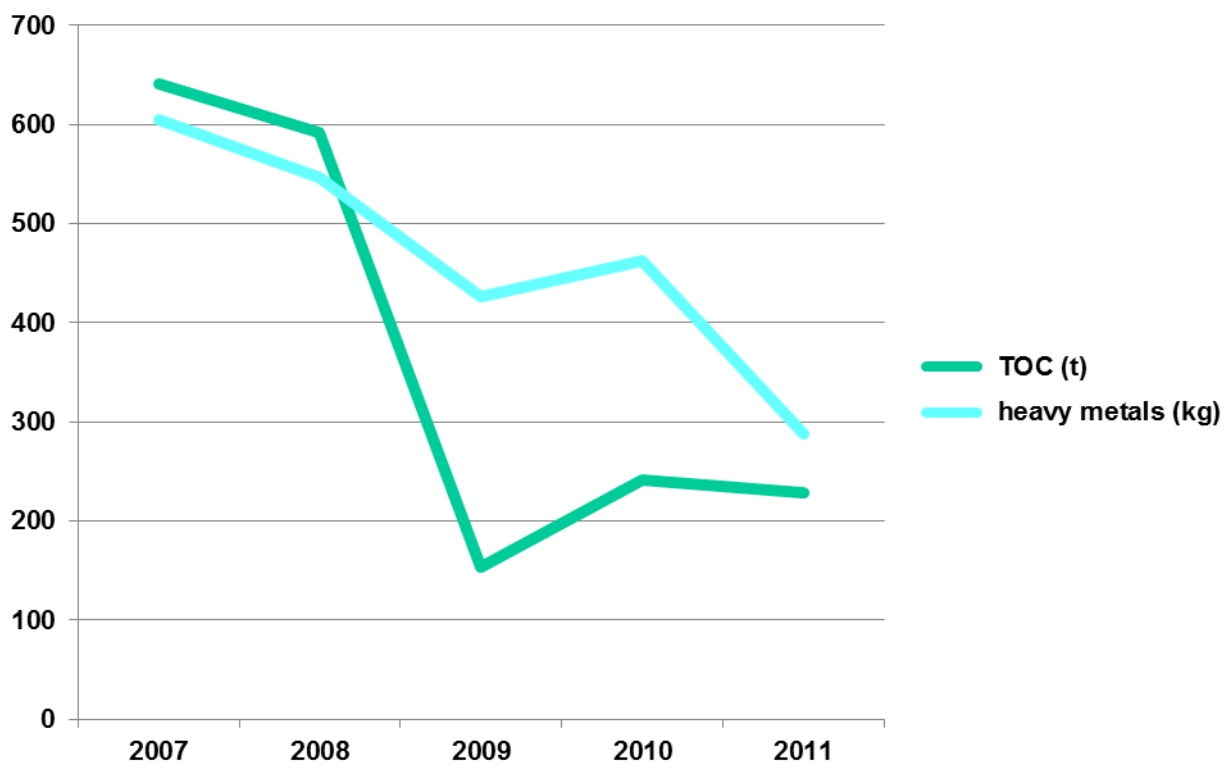
After wastewater purification, total heavy metal emissions into surface water were 288 kg in 2011, a decrease of 37% relative to the previous year.

TOC emissionen (t) into water per mio CHF sales



Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
t TOC/ mio CHF	0.200	0.135	0.087	0.069	0.071	0.023	0.013	0.014	0.012	0.012	0.026	0.024	0.046
Year	2005	2006	2007	2008	2009	2010	2011						
t TOC/ mio CHF	0.052	0.007	0.014	0.013	0.003	0.005	0.005						

Emissions into water



Year	2007	2008	2009	2010	2011
t TOC	641	592	154	242	228
kg heavy metals	605	545	426	463	288

The strong decrease in TOC emissions in 2009 are mainly due to corrective measures of main emitters who over-reported emissions before.