# Po-210 and Pb-210 in coastal waters (Gulf of Trieste, northern Adriatic)

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Po-210 was determined in various samples (matrices) collected in the Gulf of Trieste affected by the Isonzo River inflow. Observed levels were: 1) 1.41-3.35 mBq/L in dissolved phase (<0.45 μm) in seawater column (0-20 m) and up to 26.7 mBq/L in the river, 2) 0.81-4.59 mBq/L (400-2300 Bq/kg, dw) in the suspended particulate matter (SPM. 0.45-200 μm) in the seawater column and up to 10.1 mBq/L in the river, 3) 40 river - 158 Bq/kg gulf sediment, 4) 239 (autumn) – 415 to 1800 (spring) Bq/kg (dw) in meso(zoo)plankton (>200 μm) and 5) 300-400 Bq/kg (ww) in mussels (*Mytilus galloprovincialis*) consumed by humans. In seawater, 1/4 to 1/2 of total Po-210 was in particulate form while in the river the dissolved form dominates (up to 3/4). In sediments, slightly higher levels were encountered in the prodelta and in the central part of gulf. $K_D$ seawater/ SPM and seawater/sediment amounted to $5.10^6$ and $6.10^4$, respectively. Plankton fractionation revealed the highest levels in >200 μm mesoplankton (415-1800 Bq/kg) followed by 55-200 μm (388-997 Bq/kg) and 20-55 μm (318-810 Bq/kg) microplankton. Data show higher levels in all matrices compared to other Adriatic and Mediterranean areas. Po-210/Pb-210 ratios in water and sediments were mostly close to 1. They greatly increased in trophic levels reflecting a preferential bioaccumulation of Po-210. Greater accumulation appeared in the pelagic feeding species.