

# GRANULOMETRIC COMPOSITION OF DUST RELEASED FROM ZINC AND LEAD SMELTING

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## Summary

Granulometric composition of dust coming from main technological nodes – i.e. from the sinter plant, blast furnace and lead refinery – of the zinc smelter in Poland was investigated. Samples of dust trapped in bag filters were collected. The sieve analysis, sediment analysis and a laser analyzer of granulometric composition were used in investigations. Mass and particle number contributions of the dust to nine granulometric fractions having aerodynamic diameters in intervals: 0–2.5, 2.5–5, 5–10, 10–20, 20–32, 32–40, 40–63, 63–100, 100–250  $\mu\text{m}$  were determined. To determine mathematical functions describing (mass and particle number) changes in the fractional composition of each dust the results were statistically analyzed by applying the nonlinear estimation. Using of the polynomial regression provided a very good correlation between the sought functions and results of measurements. The results of measurements are presented in tables and charts. High degree of granulometric diversity of the investigated dust samples, depending on the dust formation mechanisms, i.e. on the technology used and composition of raw materials, was noted. High share of the fine particles in the dust may be a serious hazard to human health, especially in the case of breakdown in functioning of dust collectors.