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An inventory of radioactive residue and waste streams coming from industrial sectors involving NORM in the Netherlands

An inventory was made of radioactive residues and waste materials disposed of between 2018 and 2020 in the Netherlands. The inventory included waste from industrial sectors involving NORM. This research contributed to the updating of the Dutch National Programme of Radioactive Waste and Spent Fuel. For NORM waste streams we identified the relevant radionuclides, total activity and total mass. Also the different disposal routes were identified and possibilities to minimize waste were examined. This information was gathered through interviews, licences and annual reports from the industries and literature.

We identified 230 industries that use material containing NORM in the Netherlands. When expressed in mass, over 90% of the total quantity of disposed radioactive material came from two industries: the production of titanium dioxide and steel. Annually nearly 86000 tonnes of all NORM is disposed of and divided over three routes. About 6000 tonnes is sent for processing, 48000 tonnes was sent to landfills as radioactive waste and 32000 tonnes was disposed of at landfill sites as conditionally cleared material. For more than half of the (very) low radioactive NORM material ending up at landfills, opportunities for reduction of the quantity through recycling appeared technically feasible.

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