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Kurzfassung des deutschsprachigen Artikels

**Einfluß von Calciumspezies auf Korrosion und Verschmutzung in MVA und EBS-Kraftwerken**

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## Impact of Calcium Phases on Corrosion and Fouling in Waste-to-Energy Plants

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**ABSTRACT:** Calcium is an element that is common in industrial products and thus also in waste materials. The impact of calcium phases in the waste on boilers of waste-to-energy plants or RDF power plants is often underestimated.

The most common calcium phases that can be detected in the combustion residues are calcium silicate and calcium sulfate, both of which show only a secondary effect on formation of fouling and no effect on corrosion of the steel material of the boiler. Further calcium bearing compounds are calcium chloride phases which may have a massive impact on the availability of the power plant with increasing occurrence. By mixing the calcium chloride phases with alkali chlorides the melting point of the formed salts can be reduced to as low as about 500°C. At flue gas temperatures from 900 – 600°C the calcium chloride salts therefore can be in a molten state. Due to sticky surfaces, a rapid growth of the fouling occurs that may force the shutdown of the plant. Furthermore, calcium chloride phases may cause corrosive attacks. On the one hand, calcium chloride may support the stabilization of the iron chloride and therefore trigger high temperature corrosion. On the other hand, calcium chloride may have a negative impact at the end of the boiler where electrolytical corrosion can occur.